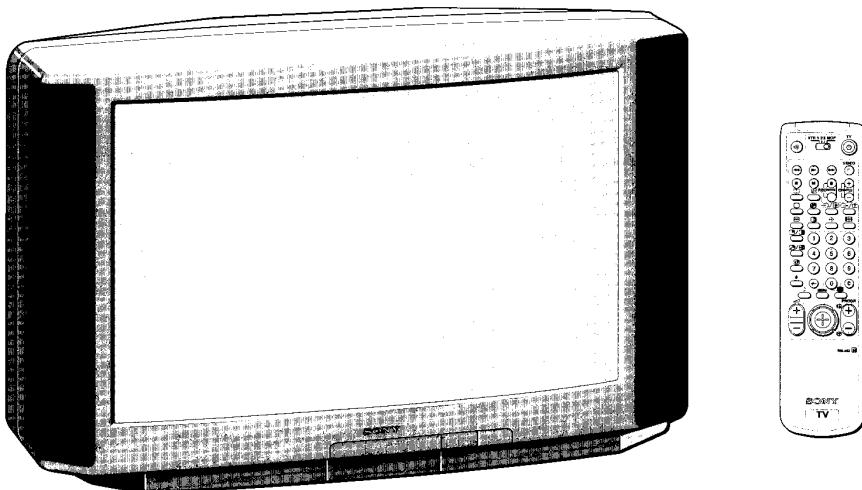


SERVICE MANUAL

AE-4 CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.	MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-28WX2A	RM-862	Italian	SCC-K43D-A	KV-28WX2E	RM-862	Spanish	SCC-K42D-A
KV-28WX2B	RM-862	French	SCC-K45D-A				
KV-28WX2D	RM-862	AEP	SCC-K41D-A				



SuperTrinitron

WIDE



TRINITRON® COLOR TV
SONY®

ITEM	MODEL	Television System	Channel Coverage	Colour System
Italian	B/G/H, D/K	B/G/H VHF: E2-E12 UHF: S1-S20 CABLE TV (1) : S1-S41 CABLE TV (2) : S01-S05, M1-M10, U1-U10 ITALIA VHF: A-H, H1, H2 D/K VHF: R01-R12 UHF: R21-R69 CABLE TV VHF: S1-S41, UHF: S01-S05	PAL, PAL+, SECAM NTSC3.58/4.43 (video input only)	
French	B/G/H, D/K, L, I	L SECAM VHF: F2-F10 UHF: F21-F69 TV CABLE TV (1) VHF: B-Q UHF: S21-S44 PAL B/G/H VHF: E2-E12 UHF: E21-E69 CABLE TV (1) : S1-S41 CABLE TV (2) : S01-S05, M1-M10, U1-U10 ITALIA VHF: A-H, H1, H2 PAL I UHF: B21-B69 D/K VHF: R01-R12 UHF: R21-R69 CABLE TV VHF: S1-S41, UHF: S01-S05	PAL, SECAM NTSC3.58/4.43 (video input only)	
AEP	B/G/H, D/K	B/G/H VHF: E2-E12 UHF: S1-S20 CABLE TV (1) : S1-S41 CABLE TV (2) : S01-S05, M1-M10, U1-U10 ITALIA VHF: A-H, H1, H2 D/K VHF: R01-R12 UHF: R21-R69 CABLE TV VHF: S1-S41, UHF: S01-S05	PAL, PAL+, SECAM NTSC3.58/4.43 (video input only)	
Spanish	B/G/H, D/K	PAL B/G/H VHF: E2-E12 UHF: E21-E69 CABLE TV (1) : S1-S41 CABLE TV (2) : S01-S05, M1-M10, U1-U10 ITALIA VHF: A-H, H1, H2 D/K VHF: R01-R12 UHF: R21-R69 CABLE TV VHF: S1-S41, UHF: S01-S05	PAL, PAL+, SECAM NTSC3.58/4.43 (video input only)	

MODEL	28WX2A	28WX2B	28WX2D	28WX2E
Power Consumption	119W	131W	135W	135 W

SPECIFICATIONS

Picture Tube	Super Trinitron WIDE Approx. 71 cm (28 inches) (Approx. 66 cm picture measured diagonally) 110° deflection	[FRONT] 3 Video input - phono jack 3 Audio inputs - phono jacks 3 S video input - 4 pin DIN Headphones jack: stereo minijack
Rear/Front Terminals		
[REAR]	21-pin Euro connector (CENELEC standard) <ul style="list-style-type: none"> - Inputs for audio and video signals - Inputs for RGB - Outputs of TV video and audio signals 2/ 21-pin Euro connector <ul style="list-style-type: none"> - Inputs for audio and video signals - Inputs for S video - Outputs for audio and video signals (selectable) Audio outputs (variable) - phono jacks External speaker terminals : 2-pin DIN (5)	Sound output 2x30W (music power), 2x15W (RMS) Dimensions 736x528x500 mm approx. Weight Approx. 39.0 kg Supplied accessories Remote Commander RM-862 (1) Batteries R6 (2) Aerial cable (1) Other features Digital comb filter (High resolution), FASTEXT, DNR (Digital Noise Reduction), Dolby Digital Surround System, 100Hz Digital Plus, PAL plus, Multi PIP, Super Spectrum Sound, NICAM stereo (KV-28WX2B and 28W2U only)

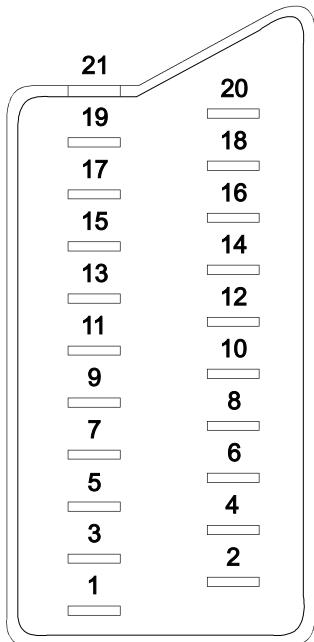
[RM-862]

Remote control system Infrared control
 Power requirements 3V dc (2 batteries) R6 (size AA)
 Dimensions Approx. 210x56x24 mm (w/h/d)
 Weight Approx. 110g
 (Not including battery)

Design and specifications are subject to change without notice.

Item \ Model name	KV-28WX2A	KV-28WX2B	KV-28WX2D	KV-28WX2E
PIP	OFF	OFF	OFF	OFF
MPIP	ON	ON	ON	ON
Rotation Coil	ON	ON	ON	ON
VM Set (Velocity Modulation)	ON	ON	ON	ON
PAL +	ON	ON	ON	ON
Scart 1	ON	ON	ON	ON
Scart 2	ON	ON	ON	ON
Front in (3)	ON	ON	ON	ON
AKB in 16:9 mode	ON	ON	ON	ON
TXT	ON	ON	ON	ON
FLOF	ON	ON	ON	ON
TOP	ON	ON	ON	ON
Norm B/G/H	ON	ON	ON	ON
Norm I	OFF	ON	OFF	OFF
Norm D/K	ON	ON	ON	ON
Norm L	OFF	ON	OFF	OFF
Language Preset	Italian	French	German	Spanish

21 pin connector (1)



Pin No.	1	2	4	Signal	Signal Level
1	○	○	○	Audio output B (Right)	Standard level : 0.5V rms Output impedance : Less than 1k ohms*
2	○	○	○	Audio input B (Right)	Standard level : 0.5V rms Output impedance : More than 10k ohms*
3	○	○	○	Audio output A (Left)	Standard level : 0.5V rms Output impedance : Less than 1k ohm*
4	○	○	○	Ground (Audio)	
5	○	○	○	Ground (Blue)	
6	○	○	○	Audio input A (Left)	Standard level : 0.5V rms Output impedance : Less than 10k ohm*
7	○	●	●	Blue input	0.7 ± 3dB, 75 ohms, positive
8	○	○	○	Function select (AV control)	High state (9.5 - 12V) : Part mode Low state (0 - 2V) : TV mode Input impedance : More than 10k ohms Input capacitance : Less than 2nF
9	○	○	○	Ground (Green)	
10	○	○	○	Open	
11	○	●	●	Green	
12	○	○	○	Open	
13	○	○	○	Ground (Red)	
14	○	○	○	Ground (Blanking)	
15	○	—	—	Red input	0.7 ± 3dB, 75 ohms, positive
	—	○	○	(S signal) chroma input	0.7 ± 3dB, 75 ohms, positive
16	○	●	●	Blanking input (Ys signal)	High state (1 - 3V) Low state (0 - 0.4V) Input impedance : 75 ohms
17	○	○	○	Ground (Video output)	
18	○	○	○	Ground (Video input)	
19	○	○	○	Video output	1V ± 3dB, 75ohms, positive sync : 0.3V (-3 + 10dB)
20	○	—	—	Video input	1V ± 3dB, 75ohms, positive sync : 0.3V (-3 + 10dB)
	—	○	○	Video input Y (S signal)	1V ± 3dB, 75ohms, positive sync : 0.3V (-3 + 10dB)
21	○	○	○	Common ground (plug, shield)	

○ Connected ● Not Connected (Open) * at 20Hz - 20kHz

Pin No.	Signal	Signal Level
1	Ground	
2	Ground	
3	Y (S signal) input	1V ± 3dB 75 ohm, positive Sync. 0.3V -3 + 10dB
4	C (S signal) input	0.3V ± 3dB 75ohm, positive Sync.

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CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

ATTENTION

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

WARNING !!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

ATTENTION !!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÂSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ÊTRE UTILISÉ LORS DE TOUT DÉPANNAGE. LE CHÂSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDE À L'ALIMENTATION SECTEUR.

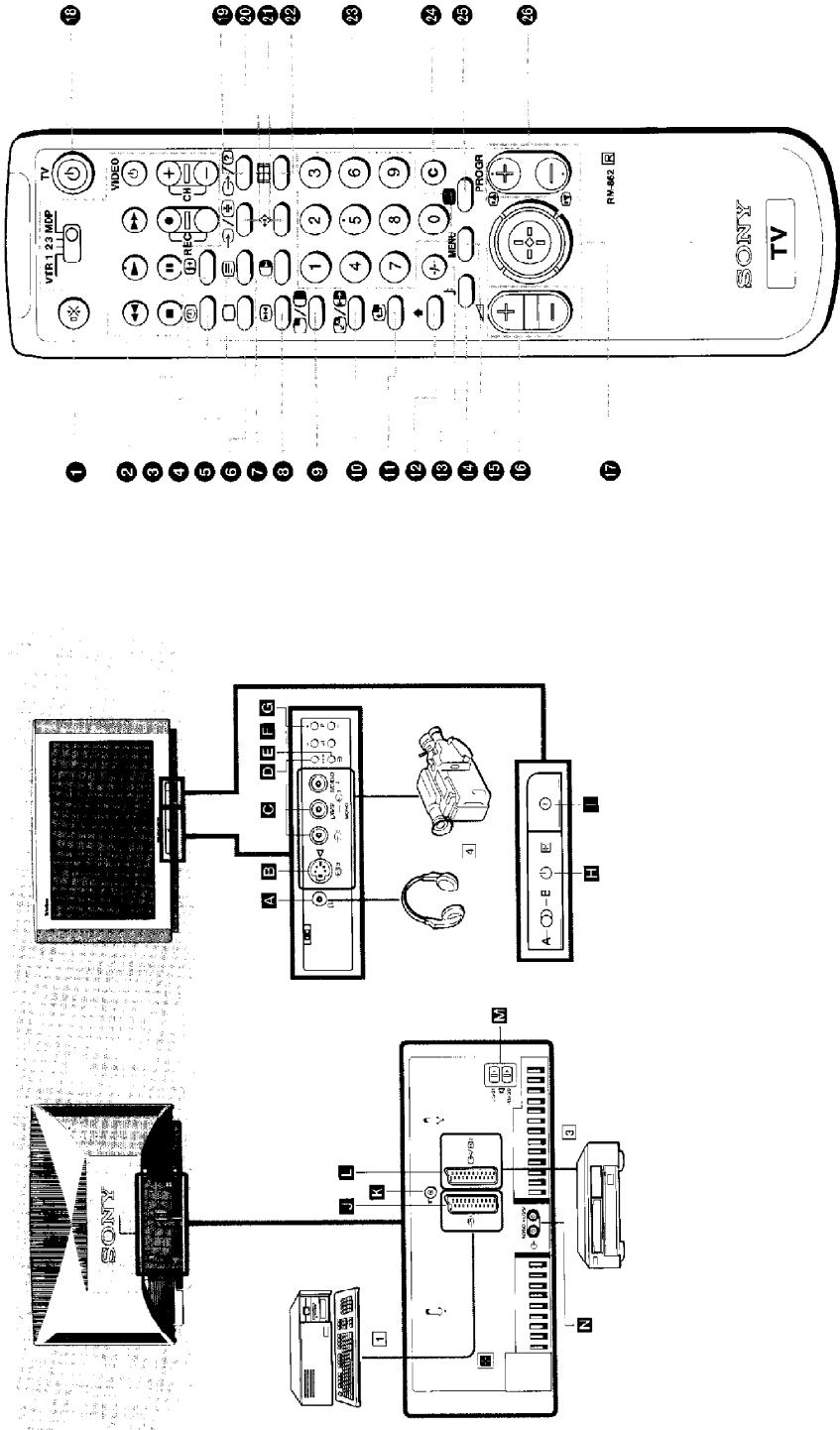
ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MARQUE  SUR LES VUES EXPLOSÉES ET LES LISTES DE PIÈCES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÈCE EST INDICUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY.

SAFETY-RELATED COMPONENT WARNING!!
COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND, IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1 GENERAL

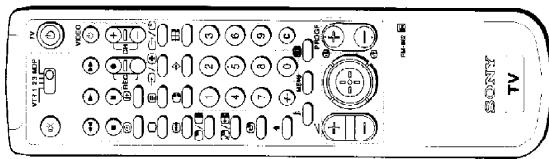
The operating instructions mentioned here are partial abstracts from the Operating Instructions Manual. The page numbers of the Operating Instruction Manual remain as in the manual.



Overview

This section briefly describes the buttons and controls on the TV set and on the Remote Commander. Please open the flaps at the front and at the back of the Instruction Manual for detailed illustrations of the Remote Commander and the TV set. Letters in boxes refer to the buttons and connectors on the TV set; numbers on circles refer to the buttons on the Remote Commander. For more information, refer to the pages given next to each description.

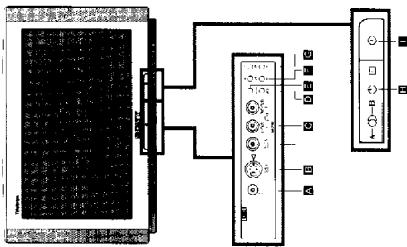
Remote Commander



Reference and Symbol	Name	Refer to page
①	Muting on/off button	28
②	VCR operation	41
③	VTR 1/2/3 MDP	41
④	VIDEO	41
⑤	CH +/-	41
⑥	On-screen display button	28
⑦	Time display button	28
⑧	Teletext button	28, 37
⑨	TV power on/TV mode button	28
⑩	No function on this set	28
⑪	Freeze button	28
⑫	No function on this set	28
⑬	No function on this set	28
⑭	No function on this set	28
⑮	Double digit entering button	28
⑯	Sound mode button	34
⑰	Menu on/off button	29
⑱	Volume control buttons	28
⑲	Joystick for menu selection	29
⑳	Press to confirm selection (OK function)	28
㉑	TV standby	28
㉒	Output mode selector	40
㉓	Teletext: reveal	37
㉔	Input mode selector	28
㉕	Teletext: freezing the subpage	37
㉖	Teletext: favourite pages	39
㉗	Screen format	28
㉘	Number buttons	28
㉙	Direct channel entering	28
㉚	Picture mode	34
㉛	Programme	28
㉜	Teletext: page up/page down	37

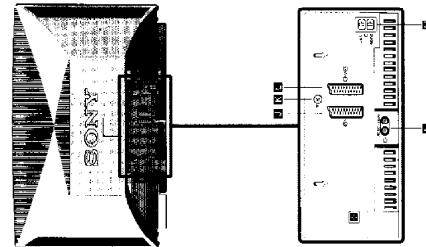
TV set – front

Reference and Symbol	Name	Refer to page
A	Headphones jack	35
B	S-video input jack	40
C	1:input jacks (video, audio)	40
D	Reset button	28
E	Input mode button	28
F	Volume control	28
G	Programme buttons	28
H	Standby mode indicator	28
I	Main power switch	28



TV set – rear

Reference and Symbol	Name	Refer to page
J	21-pin Euro connector	40
K	Aerial socket	26
L	21-pin Euro connector	40
M	Left and right speaker terminals	42
N	Audio phono jacks	40
O	L/G/S/F	40

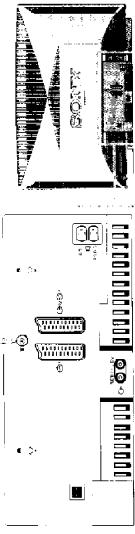


Basic Operation

Step 1 Installation

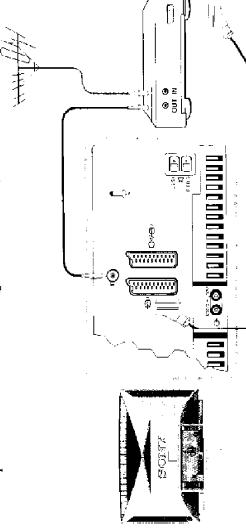
A Connecting the Aerial

If you connect a VCR, skip to step 3).
Insert the aerial plug of the supplied serial cable tightly into the aerial socket **T-K**.



B Connecting a VCR

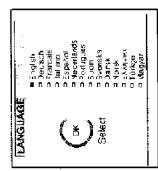
We recommend that you tune in the VCR signal to the programme position 0. Use the preset function „Manual Programme Preset“ (page 29) to do this.



Step 2 Basic Presetting

A Choosing the Menu Language and the Country

Using this function you select the language of the menu screens. Also you select the country in which you will use the TV. In this way the channels of the selected country will automatically get the top positions during automatic presetting.



B Presetting Channels Automatically

With this function the TV automatically searches and stores up to 300 channels onto programme positions. If you prefer „Manual Presetting of channels“ please refer to page 29 in Advanced Operation.

- 1 Press MENU **④**.
- 2 Push the joystick **②** to blue or green to select the symbol **■** on the menu screen, then push to yellow.

- 3 Push the joystick **②** to blue or green to select „Auto Programme“, then push to yellow. The menu AUTO PROGRAMME appears.

- 4 a) All items shown on the menu screen are as wanted. Press joystick **②** to select START. Now the automatic channel presetting starts from programme position 1.
or
b) You wish to change items as shown on the menu screen: Push the joystick **②** to blue or green. Push to yellow repeatedly until the desired item is highlighted.

Push the joystick **②** to blue or green to select the following possibilities.

ACI (Automatic Channel Installation, depending on availability of service in your country)
en: fast channel presetting by special networks using the channel frequency (e.g. PDS5)
TV-system and station code:
off: ACI is not active, only IT (intelligent Tuner Preset)

SYS (TV Broadcast System)
CH (channel)
B/G for Western European Countries
D/K for Eastern European Countries

PROG (Programme Position)
Presetting automatically starts from position 1.
C: start presetting with terrestrial channels
S: start presetting with cable channels

Press the joystick **②** as soon as the automatic presetting should start.
5 After presetting the normal TV picture reappears.

! Respect your environment! Dispose of used batteries in an environmental friendly way.

Step 3 TV operation

Using Direct Access Buttons

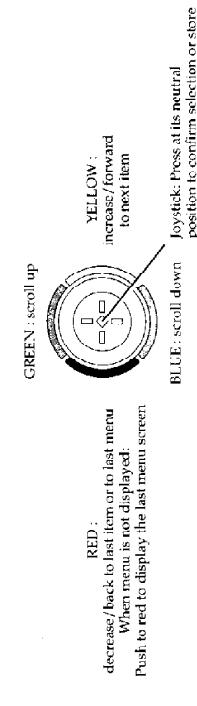
This section explains functions used while watching TV. Most operations are carried out using the Remote Commander (numbers in circles). All basic functions are also available on the TV set itself (letters in boxes).

To	Press
Switch on	• ON on TV. • ① . TV is now in standby mode and indicator E lights up.
Select programmes	• PROGR +/- ② or number buttons ③ . For double digit number, press -/- ④ , then the two number buttons ③ . E.g. for 24, press -/- ④ , then 2 and 4.
Display a programme table	• The joystick ⑤ . Push the joystick ⑤ to blue or green to select a programme, then Press the joystick ⑤ to confirm.
Display on screen indications	• D ⑥ . Press again to make the indications disappear.
Adjust the volume	• </> ⑦ E .
Mute the sound	• OK ⑧ . Press again to restore the sound.
Display tie time (only available when tie-test is broadcast)	• D ⑨ . Press again to make the display disappear.
Tune in a channel temporarily	• SC ⑩ once for terrestrial channels, twice for cable channels. The indication SC or SC -terrestrial channels appears. Enter the channel number with two digits, e.g. for 4, press 0, then 4.
View the input of a connected device (see also page 46)	• -/- ⑪ repeated until the desired input signal appears. Press OK ⑫ to restore the normal TV picture.
View teletext (see also page 37)	• OK ⑬ to switch on. Input a page number, using the number buttons ⑭ (e.g. for page 125, press 1, 2 and 5), OK ⑮ to switch off.
Change the screen mode (see also page 36)	• TV ⑯ repeatedly. The mode changes as follows: Auto Wide → Smart → Zoom/PAL, Plus → Wide → 4:3.
Freeze the picture	• OK ⑰ . Press again to restore the normal TV picture.
Reset picture settings to factory levels	• OK ⑱ .

Advanced Operation
Using the Menu System

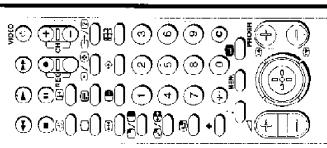
Use the following buttons on the Remote Commander to operate the Menu system:

- 1 Press MENU button **①** to switch menu on or off.
- 2 Use the joysticks **②** as follows:



Advanced Presetting

Presetting Channels Manually



Using this function you can preset channels by one to different programme sources. It's also convenient to allocate programme numbers to video input sources.

- 1 Press MENU **①**.
- 2 Push joystick **②** to blue or green to select the symbol **■** on the menu screen.
Push to yellow to confirm the selection.
- 3 Push to blue or green to select »Manual Programme Presets«. Push to yellow to confirm the selection.
- 4 Push to blue or green to select the programme position (PROG) to which you want to preset a channel, push to yellow to confirm.
- 5 Push to blue or green to select the TV broadcast system (SYS) (B/G for western European countries, D/K for eastern European countries) or a video input source (EXT). Push to yellow to confirm.
- 6 Push to blue or green to select »SC« (for terrestrial channels), »SC« (for cable channels) or »F« (for channel frequency). Push to yellow to confirm.

There are two possibilities to preset channels manually:

- a) You know the channel number or channel frequency.
Please use method »Direct Inputs«.
- b) You don't know the channel number or frequency.
or
Please use method »Search«.

Advanced Presetting



Skipping Programme Positions

7a) Direct Input:
For channel numbers you need to input a two digit number, for the frequency a three digit number.

- Push to blue or green to select the first digit of the channel number or frequency.
- Push to yellow to confirm.

- Push to blue or green to select the second digit of the number of frequency. Push to yellow to confirm. In case of the channel number the search starts.

- Push to blue or green to select the third digit of the frequency number. Push to yellow to start the search of the frequency.

- To continue search for another channel push to blue or green.

- To store the selected channel: Press the joystick **⑤**.

- Repeat steps 4 to 7a) to preset other channels.

7b) Search

Push repeatedly **ic** yellow until a blue and a green arrow appear in the section **SEARCH**.

- Push to blue or green to search for the next available channel.

- To continue search for another channel push to blue or green.

- To store the selected channel: Press the joystick **⑤**.

- Repeat steps 4 to 7b) to preset other channels.

Captioning a Station Name

Channels are usually automatically labelled during presetting. You can, however, individually name a channel or a video source using up to five characters.

1. Press MENU **⑤**

Push joystick **②** to blue or green to select the symbol **□** on the menu screen. Push to yellow to confirm.

Push to blue or green to select »Manual Programme Preset«. Push to yellow to confirm.

Push to blue or green to select the programme position of the channel you want to exchange. Press joystick **⑤** to confirm.

Push to blue or green to select the programme position of the second channel. Push joystick **⑤** to confirm. Now the two programme positions are swapped and sorted.

Repeat steps 4 and 5 to sort other programme positions.

6. After selecting all characters, press the joystick **⑤**

Press MENU **⑤** to restore the normal TV picture.

7 Repeat steps 4 to 6 to label other channels or video sources.

8 Press MENU **⑤** to prevent children watching undesirable broadcasts.

Using Parental Lock

This function enables you to prevent children watching undesirable broadcasts.

1. Press MENU **⑤**

Push joystick **②** to blue or green to select the symbol **□** on the menu screen. Push to yellow to confirm.

Push to green or blue to select »Parental Lock«. Push to yellow to confirm.

Push to green or blue to select the channel you want to block. Press the joystick **⑤** to confirm. The symbol **①** appears before the programme position to indicate that this channel is now blocked.

Repeat step 4 to block other channels.

6 Press MENU **⑤** to restore the normal TV picture.

! To unblock: Select the channel to unblock in the menu »Parental Lock«. Press the joystick **⑤**. The symbol **①** disappears.

Advanced Presetting

Sorting Programme Positions



Parental Lock

This function enables you to skip unused programme positions when selecting them with the PROG +/- buttons. However, by using the number buttons you can still select the skipped programme position.

1. Press MENU **⑤**

Push joystick **②** to blue or green to select the symbol **□** on the menu screen.

Push to yellow to confirm.

Push to blue or green to select »Manual Programme Preset«. Push to yellow to confirm.

Push to blue or green to select the programme position you want to skip. Push to yellow to confirm.

Push to blue or green to select »Programme Sorting«. Push to yellow to confirm.

Repeat steps 4 and 5 to skip other programme positions.

7. Press MENU **⑤** to restore the normal TV picture.

Sorting Programme Positions

This function enables you to sort programme positions to a preferable order.

1. Press MENU **⑤**

Push joystick **②** to blue or green to select the symbol **□** on the menu screen. Push to yellow to confirm.

3 Push to blue or green to select »Programme Sorting«. Push to yellow to confirm.

4 Push to blue or green to select the programme position of the channel you want to exchange. Press joystick **⑤** to confirm.

5 Push to blue or green to select the programme position of the second channel. Push joystick **⑤** to confirm. Now the two programme positions are swapped and sorted.

6 Repeat steps 4 and 5 to sort other programme positions.

6 Repeat steps 4 and 5 to sort other programme positions.

Using Parental Lock

This function enables you to prevent children watching undesirable broadcasts.

1. Press MENU **⑤**

Push joystick **②** to blue or green to select the symbol **□** on the menu screen. Push to yellow to confirm.

Push to green or blue to select »Parental Lock«. Push to yellow to confirm.

Push to green or blue to select the channel you want to block. Press the joystick **⑤** to confirm. The symbol **①** appears before the programme position to indicate that this channel is now blocked.

Repeat step 4 to block other channels.

6 Press MENU **⑤** to restore the normal TV picture.

Advanced Presetting

Using »Further Programme Preset«

Using the menu »Further Programme Preset« you can

- a) individually adjust and store the volume level of each channel (Volume offset).
- b) in case of picture distortions use manual fine tuning to obtain a better picture quality. The factory setting is »on« for AFT (Automatic Fine Tuning).

- 1 Press MENU 
- 2 Push joystick  to blue or green to select the symbol  on the menu screen. Push to yellow to confirm.
- 3 Push to blue or green to select »Installation«. Push to yellow to confirm.
- 4 Push to blue or green to select »Picture Rotation«. Push to yellow to confirm.
- 5 Push to yellow. Push to blue or green to adjust the picture rotation. The adjusting range is -4 to +4. Push the joystick  to confirm.
- 6 Press MENU  to restore the normal TV picture.

6a) VOL
Push to blue or green to select the volume position for the selected Programme position within a range of -7 to +7. Press the joystick  to confirm. Repeat step 6 to set the volume level for other programme positions.

b) AFT
Push to blue or green to fine-tune the channel within a range of -15 to +15. Press the joystick  to confirm. Repeat step 6 to fine-tune other channels.

7 Press MENU  to restore the normal TV picture.

Using »AV Preset«

Using this function you can preset the desired input source (e.g. 1, RGB signal) to the respective AV input (AV 1). In this way a connected VCR switches automatically to the RGB signal. Also you can label the input sources.

- 1 Press MENU 
- 2 Push joystick  to blue or green to select the symbol  on the menu screen. Push to yellow to confirm.
- 3 Push to blue or green to select »AV Preset«. Push to yellow to confirm.
- 4 Push to blue or green to select the desired AV input. Push to yellow to confirm.
- 5 Push to blue or green to select the desired source. Push to yellow to confirm. For the respective AV inputs you have the following choice:
AV1: RGB or AV
AV2: YC2 or AV
AV3: YC3 or AV
- 6 To label a source push to blue or green to select the first character (letter or number, »-« for a blank). Push to yellow to confirm. Select the other four characters in the same way.
- 7 For automatic format and PAL plus selection (Auto 16:9):
Push to blue or green to select »On« for the AV input.
- 8 Press the joystick  to store.
- 9 Repeat steps 4 to 8 for the other AV inputs.
- 10 For RGB input source only: Push to blue or green to select RGB H Centre.
 - Push to yellow to confirm.
 - Push to blue or green to adjust the centre of the picture in a range of -5 to +5.
 - Press the joystick  to store.
 - Repeat step 10 to adjust RGB H Size.
- 11 Press MENU  to restore the normal TV picture.

Advanced Presetting

Adjusting the Picture Rotation

Joystick



If due to line earth magnetism, the picture slants, you can use this function to readjust the picture.

- 1 Press MENU 
- 2 Push joystick  to blue or green to select the symbol  on the menu screen. Push to yellow to confirm.
- 3 Push to blue or green to select »Installation«. Push to yellow to confirm.
- 4 Push to blue or green to select »Picture Rotation«. Push to yellow to confirm.
- 5 Push to yellow. Push to blue or green to adjust the picture rotation. The adjusting range is -4 to +4. Push the joystick  to confirm.
- 6 Press MENU  to restore the normal TV picture.

Advanced TV operation

Adjusting the Picture and Sound

Although the picture and sound are adjusted at the factory, you can adjust them to suit your own taste.

1 Press **MENU** (or Picture) or **J** (or Sound)

Press **MENU** (or Picture) or **J** to blue or green to select **[Picture Control or J for Sound Control]**. Push joystick **①** to yellow to confirm. The menu PICTURE CONTROL or SOUND CONTROL appears.

2 Push to blue or green to select the desired item. Push to yellow to confirm.

3 Push to red or yellow to adjust the selected item. Press the joystick **②** to confirm.

For the effect of each control, see the following tables.

4 Repeat steps 2 and 3 to adjust other items.

5 Press **MENU** (or Picture) to restore the normal TV picture.

Picture Control

Item	Effect
Picture Mode	<ul style="list-style-type: none"> Personal → Economy (energy saving setting) → Live → Sports → Movie → Game
Contrast	<ul style="list-style-type: none"> Less — —— More Darker — —— Brighter
Brightness*	<ul style="list-style-type: none"> Less — —— More Greener — —— Reddish
Colour*	<ul style="list-style-type: none"> Softer — —— Sharper
Hue**	<ul style="list-style-type: none"> Resets picture to the factory preset levels
Sharpness*	<ul style="list-style-type: none"> Off: Normal On: Automatic optimization of contrast level according to TV signal
Reset	<ul style="list-style-type: none"> Off: Normal On: Reduction of picture noise in case of weak signal's
A1	<ul style="list-style-type: none"> 1: Normal 2: LFR (line Flicker Reduction) off
Noise Reduction	<ul style="list-style-type: none"> * Only if "Personal" or "Economy" is selected in "Picture Mode". ** Available for NTSC colour system only.
Digital Mode	<ul style="list-style-type: none"> 1: Normal 2: LFR (line Flicker Reduction) off

Advanced TV operation

Sound Control

Item	Effect
Sound Mode	<ul style="list-style-type: none"> Choice between different sound effects User → Pop → Jazz → Rock
Treble*	<ul style="list-style-type: none"> Less — —— More More left — —— More right
Bass*	<ul style="list-style-type: none"> Less — —— More Off: normal On: for music broadcasts
Balance	<ul style="list-style-type: none"> More left — —— More right
Loudness*	<ul style="list-style-type: none"> Off: normal On: special acoustic effect
Space	<ul style="list-style-type: none"> A: channel 1 or B: channel 2 Stereo → Mono
Dual Sound	<ul style="list-style-type: none"> Headphones — —— Volume More — —— Less
Headphones	<ul style="list-style-type: none"> More — —— Less
Volume	<ul style="list-style-type: none"> More — —— Less
Dual Sound	<ul style="list-style-type: none"> A: channel 1 or B: channel 2 Stereo → Mono

* Only if "User" is selected in "Sound Mode".



Using the Sleep Timer

Item	Effect
Sleep Timer	<p>This function enables you to select a time period after which the TV automatically switches into standby mode.</p> <ol style="list-style-type: none"> 1 Press MENU (or Picture). 2 Push joystick ② to blue or green to select the symbol ② on the menu screen. Push to yellow to confirm. 3 Push to yellow. Push to blue or green to select the time OFF → 10 min → 20 min → ... → 90 min. Press the joystick ② to confirm. 4 Press MENU (or Picture) to restore the normal TV picture. <p>! One minute before the TV switches into standby mode, a message is displayed on the screen.</p>

* Only if "Personal" or "Economy" is selected in "Picture Mode".

** Available for NTSC colour system only.

Advanced TV Operation

Using Multi PIP

Using Multi PIP, you can scan 12 successive TV channels on the screen (Programme Catching) or display 12 successive freeze pictures on the screen (Photo Mode).

1 Press MENU .

2 Push joystick  to blue or green to select the symbol  on the menu screen.

a) Programme Catching

Push to blue or green to select "Programme Catching". Press the joystick . Now a scan of 12 successive programmes (11 still pictures, 1 live picture where the cursor is positioned) is displayed on the screen starting from the programme tuned in. Pushing the joystick to blue, green, red or yellow, you can move the cursor in all directions and update the still pictures. When selecting a programme position lower or higher than the 12 displayed ones, the programme scanning starts again. Press MENU  to restore the normal TV picture.

>Selecting a programme using Programme Catching:

Push the joystick  to blue, green, red or yellow to select the programme position you want, then press the joystick . Now the selected programme appears and you are back in the normal TV mode.

b) Photo mode

Push to blue or green to select "Photo mode". Press the joystick . Now the main picture is displayed as a succession of 11 still pictures and a 12th picture, which is live. Push to blue or green to start the photo mode again. Press the joystick  to restore the normal TV picture.

Operating Screen Mode

Using Screen Mode you can change the aspect ratio of the screen for wide screen effects, or reproduce the main picture image by image (Crop function).

1 Press MENU .

2 Push joystick  to blue or green to select the symbol  on the menu screen.

3 Push to blue or green to select "Screen Mode". Push to yellow to confirm.

Push to blue or green to select one of the following menus:

- Smart - initiation of wide screen effect (16:9) for 4:3 broadcasts
- Zoom - initiation of wide screen effect (16:9) for movies broadcast in cinematic format.
- Wide - for 16:9 broadcasts or PAL+ for PAL+ broadcasts
- 4:3 - conventional 4:3 picture
- AutoWide - automatic selection of the optimum screen ratio (e.g. 4:3 picture automatically changes to Smart mode, 16:9 picture changes to Zoom mode)

Press the joystick  to confirm the selection.

4 Only in Zoom / Auto Wide Mode: Changing the Screen Position

In Zoom mode parts of the top and bottom of the picture are cut off. Using "Screen" mode you can move the screen up/downwards in order to see the cut-off parts (e.g. to read subtitles). Push to blue or green to select "Screen Position". Push to yellow to confirm.

Push to blue or green to adjust the screen position (-10 to +10 or -5 to +5). Press the joystick  to confirm.

5 Stroke Mode

Push to blue or green to select "Stroke". Push to yellow to confirm. The TV picture is now displayed image by image, creating a slow motion effect. Push to blue or green to select the speed of the motion. Press the joystick  to restore the normal TV picture.

6 Auto 16:9

Push to blue or green to select "Auto 16:9". Push to yellow to confirm. Push to blue or green to select "On". For automatic selection of format or PAL plus in case of PAL plus broadcaster, "Off" for normal mode. Press the joystick  to confirm.

7 Press MENU .

to restore the normal TV picture.

Teletext

Most TV channels broadcast information via Teletext. The index page of the broadcaster (usually page 100) informs you about how to use the service. Make sure to use a TV channel with a strong signal, otherwise Teletext errors may occur.

Direct Access Function



Switching Teletext on and off

- 1 Select the TV channel which carries the Teletext service you want to view.
- 2 Press  once for P&T (Picture and Teletext). The normal TV screen is displayed on the left, the Teletext screen on the right.
- 3 Press  twice to get Teletext only. Press  three times for MTS mode. The normal TV screen and the Teletext screen are overlapped.
- 4 Press  to switch Teletext off.

Selecting a Teletext page

Direct Page Selection
Use the number buttons  to input three digits of the page number. If you have made a mistake, type in any three digits, then reenter the correct page number.

Page Catching

1 Select a teletext page with page numbers (e.g. index page).

2 Press the joystick  "Page Catching" is displayed at the top of the page. Push joystick  to blue or green to select the page you want. Press the joystick . The requested page is displayed after some seconds. Press  to resume normal teletext reception.

Accessing the next or preceding page

Press  (Page +) or  (Page -).

Freezing a teletext subpage

Press  The symbol  is displayed. Press  to resume normal teletext reception.

Revealing hidden information (e.g. for a quiz)

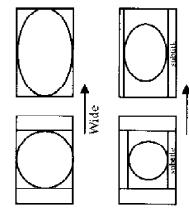
Press  Press again to cancel.

Using Fasttext

(only available, if the TV station broadcasts Fasttext signals)

With Fasttext you can access pages with one key stroke. When Fasttext is broadcast, a colour-coded menu appears at the bottom of the screen. The colours of this menu correspond to the red, green, yellow and blue marks on the Remote Commander. Push the joystick  to the colour mark which corresponds to the colour-coded menu. The page is displayed after some seconds.

continued >>>>>>>



Teletext

Using the Teletext Menu

Your TV is provided with a menu-guided teletext system. When teletext is switched on, you can use the buttons for menu operation to operate the teletext menu.

Select the teletext menu functions as follows:

- 1 Press MENU  The menu is superimposed on the teletext display.
- 2 Push the joystick  to blue or green to select the teletext function, you want. Push to yellow to confirm the selection.

USER PAGES/PRESET USER PAGES

See page 39 for information about presetting and operating the user pages.

INDEX

The index gives you an overview of the contents of the teletext you are using.

TOP/BOTTOM/OKFULL

For convenient reading of a teletext page you can enlarge the teletext page. After selecting the function, an information line  Top  Bottom OKFull, is displayed. Push joystick  to green to enlarge the upper half, push to blue to enlarge the lower half. Press the joystick  to resume normal teletext reception.

TEXT CLEAR

After selecting the function you can watch a TV programme while waiting for a requested teletext page to be captured. When the page is available, the symbol  changes colour. Press  to view the requested page.

SUBTITLES

Check with your teletext service for information about subtitled TV programmes. After selecting the function the subtitles are displayed.

TIME PAGE

Check with your teletext service about the availability of time coded pages. If available, you can call up a page (e.g. an alarm page) at a certain time.

SELECT TIME PAGE

In the teletext menu. Push joystick  to yellow. An information window is displayed. Push to blue or green to select "On". Push to yellow.

2 Use the number buttons  to enter the three digits of the page you want (e.g. 301). Push to yellow after each digit. Push to yellow after each digit. Press joystick  to confirm. Press MENU  The time is displayed in the top left-hand corner of the screen. At the requested time the page is displayed.

SUBPAGE

Using this function you can select a particular teletext page from several subpages (e.g. page 2 or 6 pages in total). After selecting the function an information line is displayed. Use the number buttons  to enter the four digits (e.g. 18-54). The second page of a sequence). To cancel the request: Push joystick  to red and then to yellow.

Teletext

User Page Bank System

You can store up to 6 of your favourite teletext pages for teletext service. In this way you have quick access to the pages you frequently use.

Select the teletext menu functions as follows:

- 1 Press MENU  The menu is superimposed on the teletext display.
- 2 Push the joystick  to blue or green to select the teletext function, you want. Push to yellow to confirm the selection.

Storing pages

- 1 Press  to switch Teletext on. Press MENU .
- 2 Push joystick  to blue or green to select "Preset User Pages...". Push to yellow to confirm.

- 3 Push to blue or green to select the bank (from A to E) you want. Push to yellow to confirm.
- 4 Push to blue or green to select the three digits of your first favorite page. Push to yellow after each digit. Push to yellow to confirm.

- 5 Repeat step 4 for the other 5 favorite pages. If you do not want to preset all 6 pages numbers push to yellow without inserting any number. After finishing the presetting, press the joystick .

- 6 Push to blue or green to select "Allocate Banks". Push to yellow to confirm.
- 7 Push to blue or green to select the programme position of the channel which carries the teletext service for which you have selected your favorite pages. Push to yellow to confirm.

- 8 Push to blue or green to select the bank from step 3. Press the joystick  to confirm.
- 9 Repeat steps 3 to 8 for the other 4 banks available.

Displaying User Pages

- 1 Press MENU .
- 2 Push joystick  to blue or green to select "User Pages...". Push to yellow to confirm.

- 3 Push to blue or green to select the page you want. Press the joystick .

or

- 1 Press .
- 2 Push joystick  to blue or green to select the page you want. Press the joystick .

Push to yellow after each digit.

Additional Information

Additional Information

Channel Guide

Troubleshooting

Here are some simple solutions to problems which may affect the picture and sound.

Problem

Solution

No picture (screen is dark), no sound

- Turn the TV off for 3 or 4 seconds and then turn it on again using **G11**.
- Press **•** **•** to enter the PICTURE CONTROL menu and adjust:
 - Brightness, Contrast, and Colour.
 - Press **•** **•** repeatedly to select **•**.

Poor or no picture (screen is dark), but good sound

- Poor picture quality when watching an RGB video source

Good picture but poor or no sound

- No colour for colour programmes

Remote Commander does not function.

- Press **•** **•** + **•**.
• If **•** is displayed on the screen, press **•**.
• Press **•** **•** to enter the PICTURE CONTROL menu, select RESET, then press joystick **•**.
- Replace batteries.

If you continue to have problems, have your TV serviced by qualified personnel. Never open the casing yourself.

Channel Displays

Receivable Channels

B/G/H	E2 .. E2, 21.. 69	C02 C03 C04 .. C12 C21 .. C69
CABLE TV (1)	S1.. 4	S01 S02 .. S41
CABLE TV (2)	S01.. S05, M1.. M10, U1.. U10	S42 .. S46, S01.. S10 S11.. S20
ITALIA	A B C D E F G H, H1 H2	C13 C14 C15 C16 C17 C18 C19 C20 C11 C12
D/K	R01 .. R12, R21 .. R69	C01 .. C12 C21 .. C69
CABLE TV (1)	S01 S02.. S41	S01 S02.. S41
CABLE TV (2)	S42 S43.. S56	

For Your Safety

Television operate on extremely high voltages. To prevent fire or an electric shock, please follow the safety procedures below. For your own safety, never open the cabinet. Refer servicing to qualified personnel only.

For General Safety

- Do not expose the TV to rain or moisture.
- Do not open the rear cover.

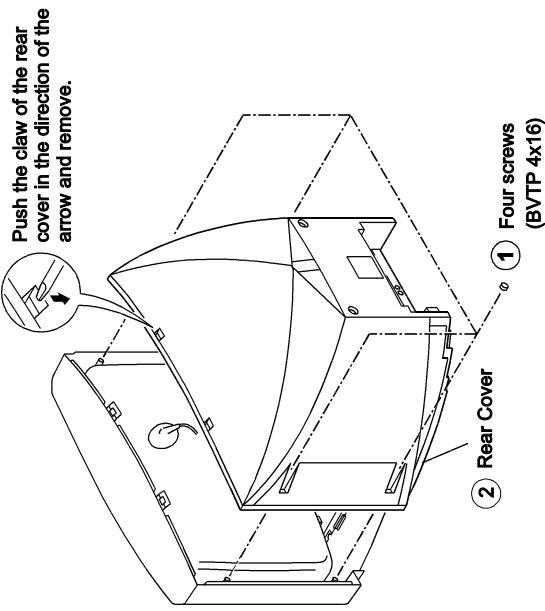
For Safe Installation

Do not block or cover the ventilation openings. For ventilation, leave a space of at least 5 cm all around the set.

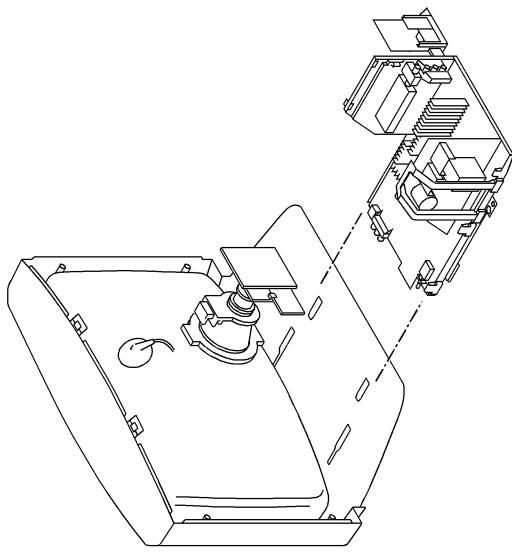
- Do not install the TV in hot, humid, or excessively dusty places.
- Do not install the TV where it may be exposed to mechanical vibrations.
- Unplug the TV if any liquid or solid object falls in it. Have it checked immediately!
- Unplug the TV if you are not going to use it for several days.
- When unplugging the TV, pull it out by the plug. Do not pull on the power cord!

SECTION 2 DISASSEMBLY

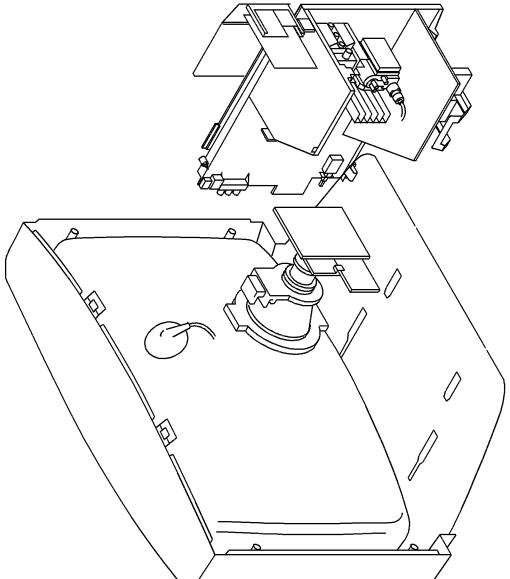
2-1. REAR COVER REMOVAL



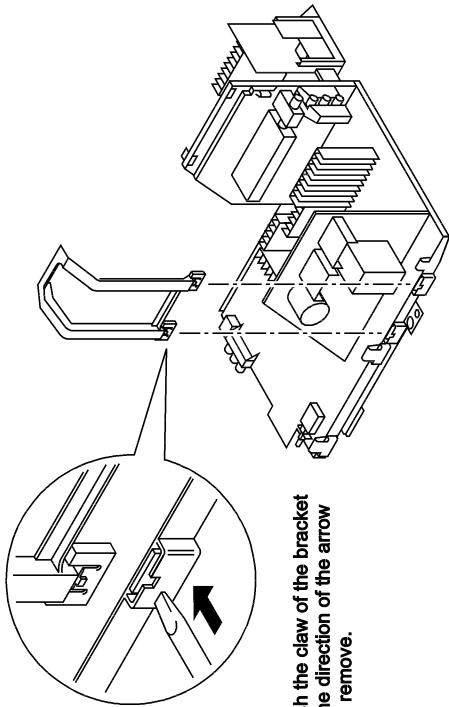
2-2. CHASSIS ASSY REMOVAL



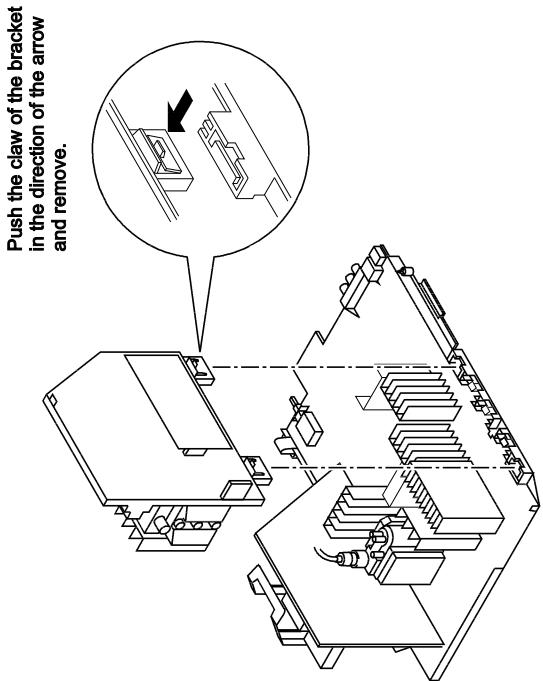
2-3. SERVICE POSITION



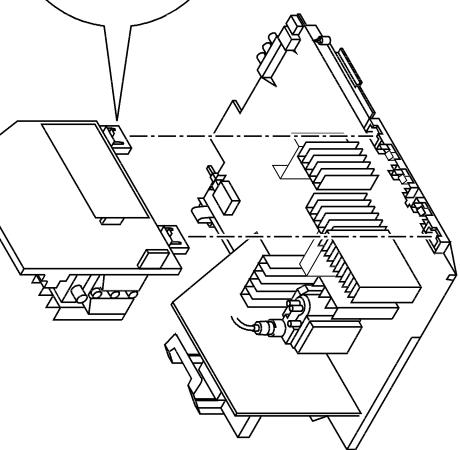
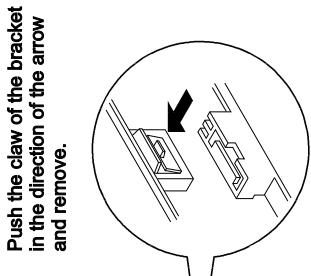
2-4. G BOARD REMOVAL



2-5. A BOARD REMOVAL



2-6. PICTURE TUBE REMOVAL



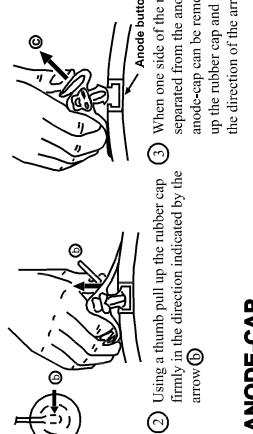
• REMOVAL OF ANODE-CAP

Note: Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

* REMOVING PROCEDURES.



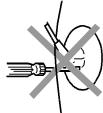
- ① Turn up one side of the rubber cap in the direction indicated by the arrow ②
- ② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ③



- ③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow ④

- **HOW TO HANDLE AN ANODE-CAP**
- ① Don't damage the surface of anode-cap with sharp shaped material !
- ② Don't press the rubber hardy not to hurt inside of anode-caps !
- A metal fitting called as shatter-hook terminal is built into the rubber.
- ③ Don't turn the foot of rubber over hardy !

The shatter-hook terminal will stick out or damage the rubber.



REMOVAL AND REPLACEMENT OF THE MAIN-BRACKET BOTTOM PLATES.

(1) REMOVING THE PLATES

In the event of servicing being required to the solder side of the D Board printed circuit, the bottom plates fitted to the main chassis bracket require to be removed. This is performed by cutting the gates with a sharp wire cutter at the locations shown and indicated by arrows.

Note : There are 5 plates fitted to the main bracket and secured by 4 or 6 gates. Only remove the necessary plate to gain access to the circuit board.

(2) REFITTING THE PLATES

Because the plates differ in size it is important that the correct plates are refitted in their original location.

The plates are identified by markings A-B-C-D-E on their top side.

1. Identify the plate by locating its marking.
2. Turn the plate over, noting where the marking is located.
3. Locate the corresponding marking indicated on the main chassis bracket. See Fig 2.
4. Refit the plate as indicated in Fig 3 with the markings located next to each other.

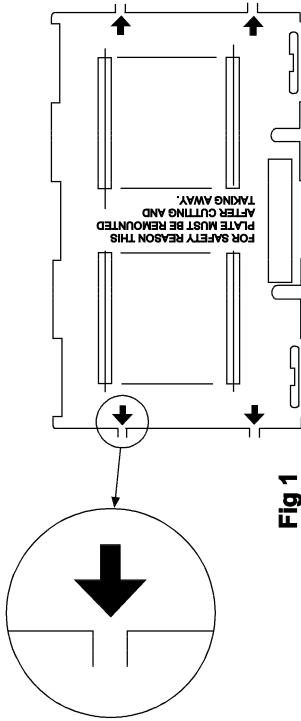


Fig 1

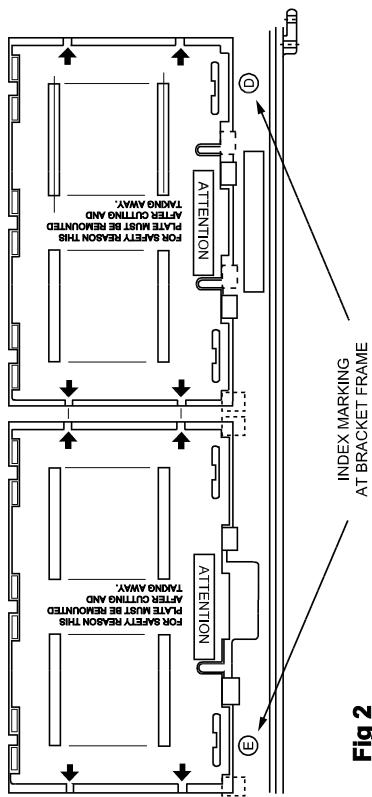


Fig 2

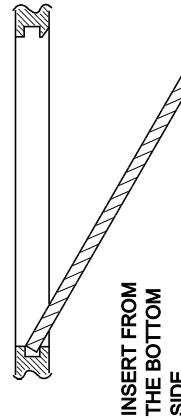


Fig 3

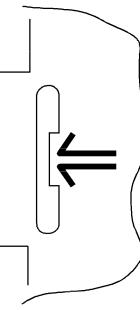


Fig 4

In the event of the plates requiring to be removed at a later stage, this can be achieved by inserting a screwdriver in the snap-recess indicated as in Fig 4 and lifting out.

SECTION 3

SET-UP ADJUSTMENTS

- When complete readjustment is necessary or a new picture tube is installed, carry out the following adjustments.
- Unless there are specific instructions to the contrary, carry out these adjustment with the rated power supply.
- Unless there are specific instructions to the contrary, set the controls and switches as follows.

Contrast normal
 Brightness normal

- Carry out the following adjustments in this order:

- 3-1. Beam landing
- 3-2. Convergence
- 3-3. Focus
- 3-4. White balance

Note: Testing equipment required.

1. Color bar/pattern generator
2. Degausser
3. Vector scope

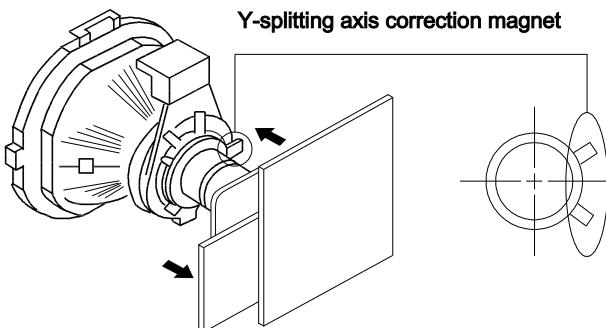
3-1. BEAM LANDING

Preparation:

1. In order to reduce the influence of geomagnetism on the set's picture tube face it in an easterly or westerly direction.
2. Switch on the set's power and degauss with the degausser.

(1) Adjustment of Correction Magnet for Y-Splitting Axis

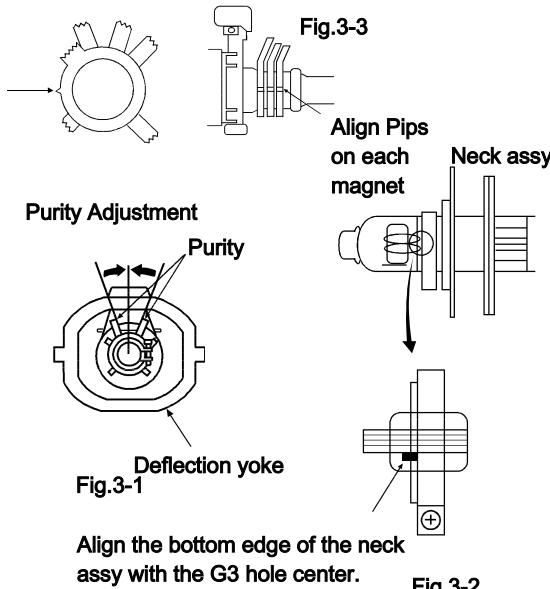
1. Input a crosshatch signal from the pattern generator.
2. Picture control is minimum and brightness control is still normal.
3. Position the neck assy as shown in Fig. 3-2.
4. Move the deflection yoke forward to touch the CRT and it stands up rightly.
5. Adjust the upper pin and the lower pin symmetrically by opening or closing the Y-splitting axis correction magnets on the neck assy.
6. Return the deflection yoke to its original position.



(2) Landing

Note: Before carrying out the following adjustments adjust the magnets as indicated below (See Fig. 3-3).

1. Input an all-white signal from the pattern generator.
 Maximize the picture setting and adjust the brightness setting.
2. Rough-adjust the focus and horizontal convergence.
3. Loosen the deflection yoke screws, align the purity adjustment knob to the central position. (See Fig. 3-1)
4. Switch from the all-white pattern to an all-green pattern.
5. Move the deflection yoke backwards and adjust with the purity magnet so that the green is at the center and it aligns symmetrically. (See Fig. 3-4)
6. Move the deflection yoke forward and adjust so that entire screen becomes green.
7. Switch the raster signal to red, then to blue and verify the landing condition.
8. When the position of the deflection yoke has been determined, fasten the deflection yoke with the screw.
9. If the beam does not land correctly in all the corners, use magnets to correct it. (See Fig. 3-5)



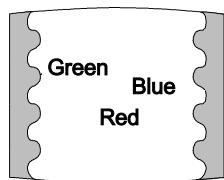


Fig.3-4

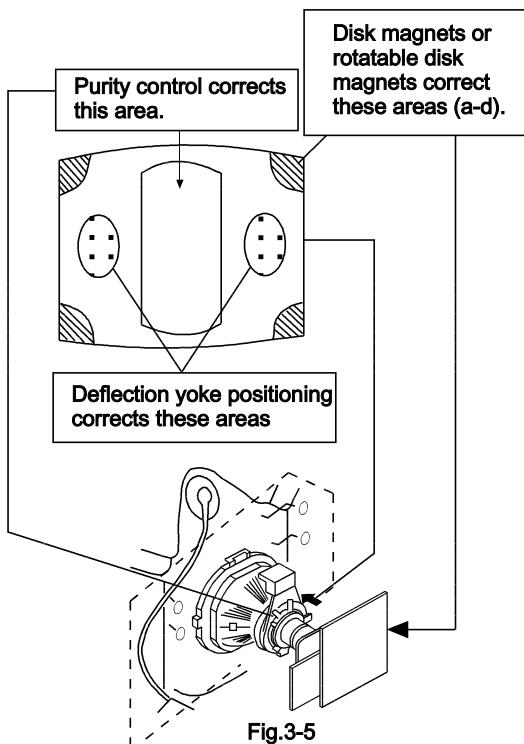
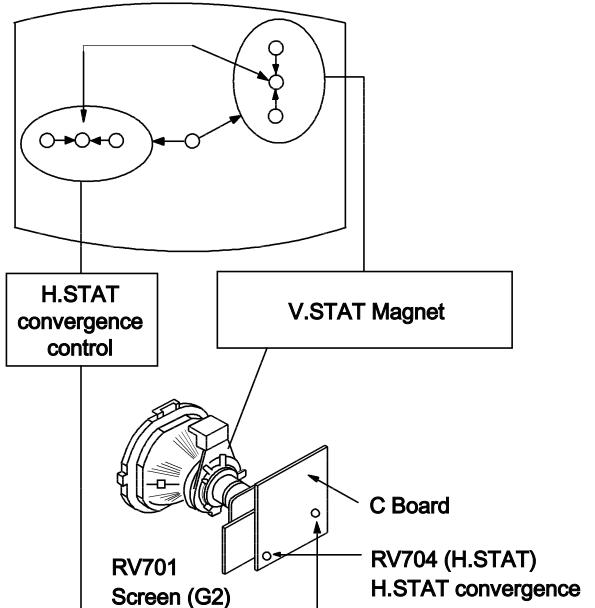


Fig.3-5

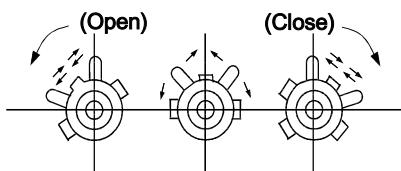
3-2. CONVERGENCE

(1) Screen center convergence (Static convergence)

1. Input a dot signal from the pattern generator. Normalize the picture setting.
2. (Moving horizontally), adjust the H.STAT control so that the horizontal red, green and blue dots coincide at the center of screen.
3. (Moving vertically), adjust the V.STAT magnet so that the vertical red, green and blue points coincide at the center of screen.

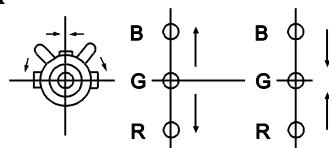


- If the horizontal dots are unable to coincide with the variable range of the H.STAT convergence, adjust together with the V.STAT convergence while tracking.
(Adjust the convergence by tilting the V.STAT convergence or by opening or closing the V.STAT convergence.)

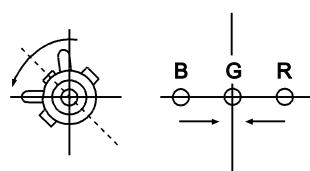


4. Movement of the red, green and blue dots by tilting the V.STAT magnet and by opening or closing the V.STAT magnet.

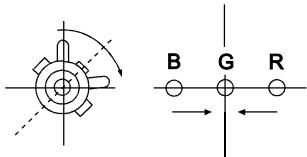
① By opening or closing the V.STAT magnet, the red, green and blue points move as shown below



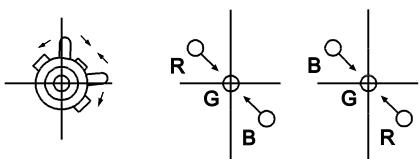
② By rotating the V. STAT magnet counterclockwise, the red, green and blue dots move as shown below.



③ By rotating the V.STAT magnet clockwise, the red, green and blue dots move as shown below.



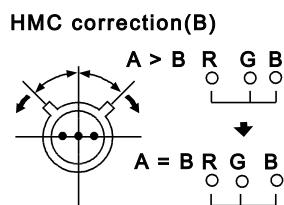
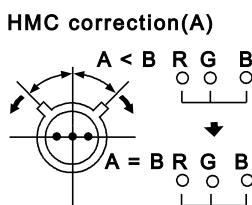
④ By opening or closing the V.STAT magnet, the red, green and blue dots move as shown below.



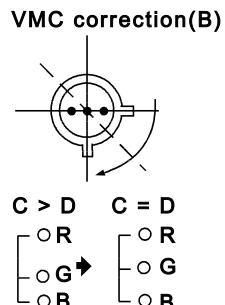
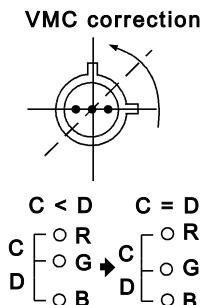
- If the blue dot does not coincide with the red and green points, correct the points by using the BMC (Hexapole) magnet.

⑤ Correction for HMC (horizontal mis-convergence) and VMC (vertical mis-convergence) by using the BMC (Hexapole) magnet.

① HMC correction by BMC (Hexapole) magnet and movement of the electronic beam.



② VMC correction by BMC (Hexapole) magnet and movement of the electronic beam.



Layout of each control

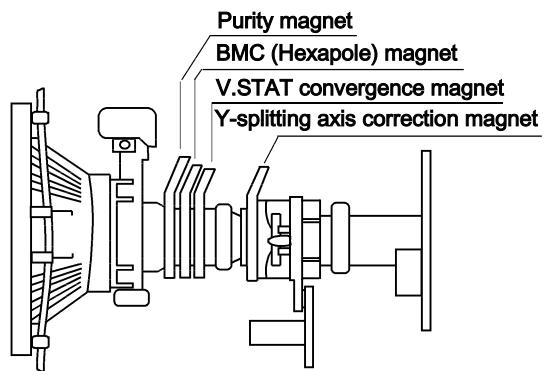
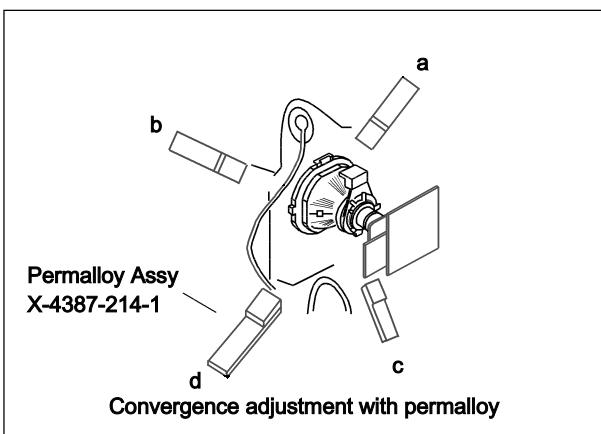
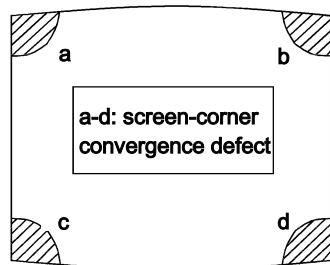


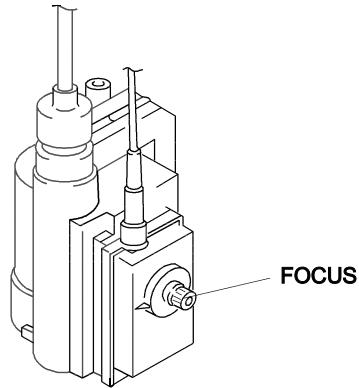
Fig.3-5

2. If you are unable to adjust the corner convergence properly, correct them with the use of permalloys.



3-3. Focus

1. Receive a television broadcast signal.
2. Normalize the picture setting.
3. Adjust the focus control on the flyback transformer for the best focus at the center of the screen.
Bring only the center area of the screen into focus, the magenta-ring appears on the screen. In this case, adjust the focus to optimize the screen uniformly.



Video Proc. TDA4780

Item No	Adjustment item	Data Amount
1	BRT	USER CONTROL
2	COL	USER CONTROL
3	PIC	USER CONTROL
4	HUE	USER CONTROL
5	R GAIN	31
6	G GAIN	Adj
7	B GAIN	Adj
8	R LVL REF	31
9	G LVL REF	Adj
10	B LVL REF	Adj
11	PEAK DRV LIMIT	63
12	GAMMA	31
13	SCP ON = 3LEV OFF = 2LEV	ON
14	DELAY	OFF

3-4. Screen (G2), White balance (Adjustment in the service mode with remote commander)

G2 adjustment (RV701)

1. Input a dot signal from the pattern generator.
2. Set the Picture, Brightness and Colour to minimum.
3. Apply 170V DC from an external power supply to the R, G and B cathodes of the CRT.
4. While watching the picture, adjust the G2 control RV701 [SCREEN] on the C board to the point just before the return lines disappear.

White balance adjustment

1. Receive an all-white signal.
2. Enter into the Service Mode by pressing 'TEST', 'TEST' and 'MENU' on the Service Commander.
3. Select 'VIDEO PROC.' from the on screen menu display and press OK .
4. The 'VIDEO PROC TDA4780' menu will appear on the screen.

5. Set picture to MAX.
6. Set the 'R GAIN' to 25.
7. Adjust the 'G GAIN' and 'B GAIN' so that the white balance becomes optimum.
8. Press the OK button to write the data for each item.
9. Set picture to MIN.
10. Set the 'R LVL REF' to 31.
11. Adjust 'G LVL REF', and 'B LVL REF' with the left and right buttons so that the white balance becomes optimum.
12. Press the OK button to write the data for each item.

SECTION 4

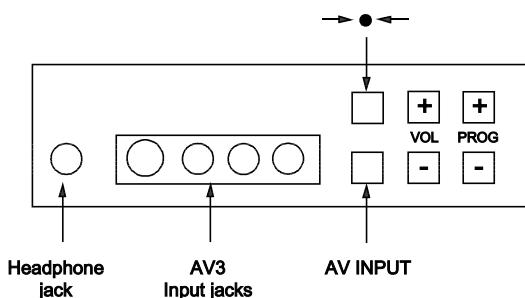
CIRCUIT ADJUSTMENTS

4-1. ELECTRICAL ADJUSTMENTS

Service adjustment to this model can be performed with the supplied remote commander, RM-862.

HOW TO ENTER INTO SERVICE MODE

- Turn on the main power switch of the set while pressing the PROG + (plus) and PROG - (minus) buttons on the front panel.



- "TT" will appear on the upper right corner of the screen.
- Press "MENU" on the commander to get the service menu on screen.

DEVICES	
Init TV	
Pip, Lumisponder & Autoside	
Sub Adjust	
Video Proc	TDA4780
Col Dec Main	TDA9144
Deflect. Cont	SDA9361
Col Dec Sub	TDA9143
Feature Box	S87C654
AI	TDA9170
DA	SDA9280
Sound	
Line23 det	

- Push the joystick up (green) or down (blue) on the remote commander to select the adjustment item.
- Press the center button to proceed to the next menu.
- If the adjustment item is 'Video Proc.', push the down button to move to 'Video Proc.'
- The Menu as indicated in Fig 4-3 will appear on the screen.
- Move the joystick up or down to move to the adjustment item and press the center (OK) button.
- Change the data in order to comply with each standard.

Item No	Adjustment Item	Data Amount
1	BRT	USER CONTROL
2	COL	USER CONTROL
3	PIC	USER CONTROL
4	HUE	USER CONTROL
5	R GAIN	31
6	G GAIN	Adj
7	B GAIN	Adj
8	R LVL REF	31
9	G LVL REF	Adj
10	B LVL REF	Adj
11	PEAK DRV LIMIT	63
12	GAMMA	31
13	SCP ON = 3LEV OFF = 2LEV	ON
14	DELAY	OFF
15	DATA BUFF	OFF
16	NTSC MATRIX	OFF
17	HDTV	OFF
18	FSBL	OFF
19	AUTO CUT OFF	ON
20	FSW 2 DIS	OFF
21	FSW 2	OFF
22	FSW 1 DIS	OFF
23	FSW 1	OFF
24	ADAPT BLACK	OFF
25	Y HIGH 1V	OFF
26	MOD2	OFF
27	BLUE STRETCH	OFF
28	VM OUT	OFF
29	PEAK DRV ABS	ON
30	TIME CNST PEAK LIMIT	OFF

Fig. 4-3

SDA9361 (VIDEO PROC.)

Item No	Adjustment item	Data Amount
1	HDE	ON
2	VR	0
3	RABL	ON
4	BLK DIS	OFF
5	2FH 2*LINE FRQ	ON
6	STANDBY MODE	OFF
7	VERTICAL	ON
8	BSE BLK SELECT	OFF
9	SSE START SCAN	OFF
10	SRSE START RED SCAN	OFF
11	GBE GUARD BAND	OFF
12	STE SCAN TIME TABLE	OFF
13	NSA SELF ADAPTION	ON
14	V SHIFT	ADJ
15	V SIZE	ADJ
16	V LIN	ADJ
17	V S-COR	ADJ
18	V EHT COMP	25" = 78 29" = 100 28" = 36 32" =
19	H SIZE	ADJ
20	PIN PHASE	ADJ
21	PIN AMP	ADJ
22	UP COR PIN	ADJ
23	LOW COR PIN	ADJ
24	H EHT COMP	25" = 78 29" = 100 28" = 36 32" =
25	H SHIFT	ADJ
26	V ANGLE	ADJ
27	V BOW	ADJ
28	PWM START	0

Item No	Adjustment item	Data Amount
29	D/A	0
30	V BLK TIME	0
31	H BLK TIME	0
32	STAR V SCAN	0
33	H BLK PHASE	0
34	V SCAN WIDTH 0	0
35	V SCAN WIDTH 1	0
36	GUARD BAND	0
37	START RED SCAN	0
38	NUMBER FIELDS	1
39	NI NON INTERLACE	OFF
40	NR VSYNC NOISE RED	ON
41	SCC WITH VBL	ON
42	MIN LINES/FIELD	0
43	MAX LINES/FIELD	0
44	AFC EHT COMP	0
45	PLL FREQ	6
46	VCR	ON
47	GEN MOD	OFF
48	HSWID	ON
49	INT H PHASE	239
50	PWM WIDTH	0
51	NOISY VCR	OFF
52	KILLZIP	OFF
53	TC3RD	OFF
54	BANDGAP 4 OFF	OFF
55	BANDGAP OFF	OFF
56	BANDGAP	0

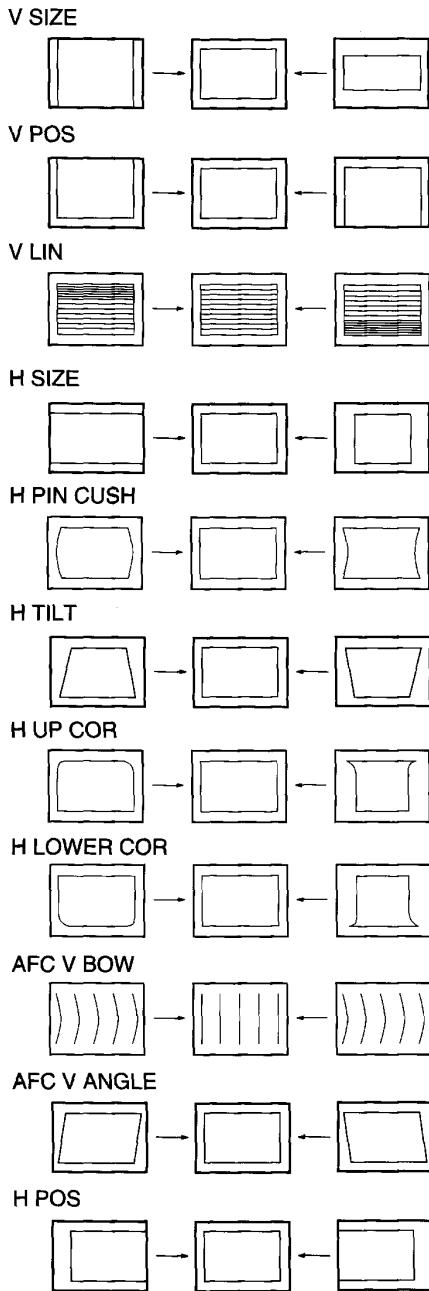
TDA4780 (VIDEO PROC.)

Item No	Adjustment item	Data Amount
1	BRT	USER CONTROL
2	COL	USER CONTROL
3	PIC	USER CONTROL
4	HUE	USER CONTROL
5	R GAIN	25
6	G GAIN	Adj
7	B GAIN	Adj
8	R LVL REF	31
9	G LVL REF	Adj
10	B LVL REF	Adj
11	PEAK DRV LIMIT	0
12	GAMMA	31
13	SCP ON = 3LEV OFF = 2LEV	ON
14	DELAY	OFF
15	DATA BUFF	OFF
16	NTSC MATRIX	OFF
17	HDTV	OFF
18	FSBL	OFF
19	AUTO CUT OFF	ON
20	FSW 2 DIS	OFF
21	FSW 2	OFF
22	FSW 1	OFF
23	FSW 1	OFF
24	ADAPT BLACK	OFF
25	Y HIGH 1V	OFF
26	MOD2	OFF
27	BLUE STRETCH	OFF
28	VM OUT	OFF
29	PEAK DRV ABS	ON
30	TIME CNST PEAK LIMIT	OFF

DEFLECTION SYSTEM ADJUSTMENT

1. Enter into the service mode and select 'Deflect cont.' The 'Deflect cont. SDA9361' adjustment menu will be displayed.
2. Select and adjust each item in order to get an optimum image.

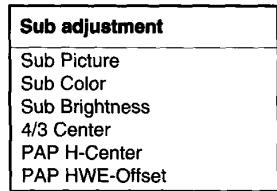
Item No	Adjustment item	Data Amount
1	HDE	ON
2	VR	0
3	RABL	ON
4	BLK DIS	OFF
5	2FH 2*LINE FRQ	ON
6	STANDBY MODE	OFF
7	VERTICAL	ON
8	BSE BLK SELECT	OFF
9	SSE START SCAN	OFF
10	SRSE START RED SCAN	OFF
11	GBE GUARD BAND	OFF
12	STE SCAN TIME TABLE	OFF
13	NSA SELF ADAPTION	ON
14	V SHIFT	ADJ
15	V SIZE	ADJ
16	V LIN	ADJ
17	V S-COR	ADJ
18	V EHT COMP	25" = 78 29" = 100 28" = 36
19	H SIZE	ADJ
20	PIN PHASE	ADJ
21	PIN AMP	ADJ
22	UP COR PIN	ADJ
23	LOW COR PIN	ADJ
24	H EHT COMP	25" = 78 29" = 100 28" = 36
25	H SHIFT	ADJ
26	V ANGLE	ADJ
27	V BOW	ADJ
28	PWM START	0



4-2. VOLUME ELECTRICAL ADJUSTMENTS

Sub Brightness Adjustment

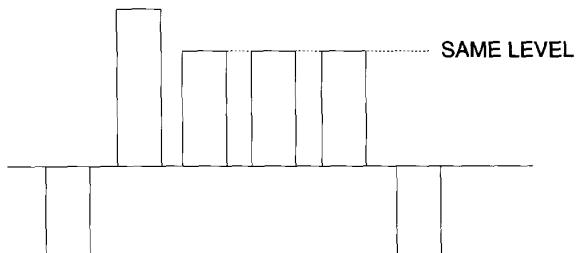
1. Enter Service Mode (Device Menu).
2. Select 'SUB ADJUST MENU'.



3. Adjust the value according to the following advice.

Sub Color Adjustment

1. Input a PAL color bar signal.
2. Connect an oscilloscope to CN3703.
3. Enter into 'SERVICE MODE'.
4. Choose 'SUB ADJUST'.
5. Enter into Sub Color mode.
6. Adjust data so that the right sides of the waveforms are of equal height.



4-3. TEST MODE 2:

Is available by pressing the Test button twice, OSD "TT" appears. The functions described below are available by pressing the two numbers. To release Test Mode 2, press 0, 10, 20 ... twice or switch the TV into Standby Mode. Pressing the two Local Control buttons (+ and -) during Power ON will also switch into "TT" mode.

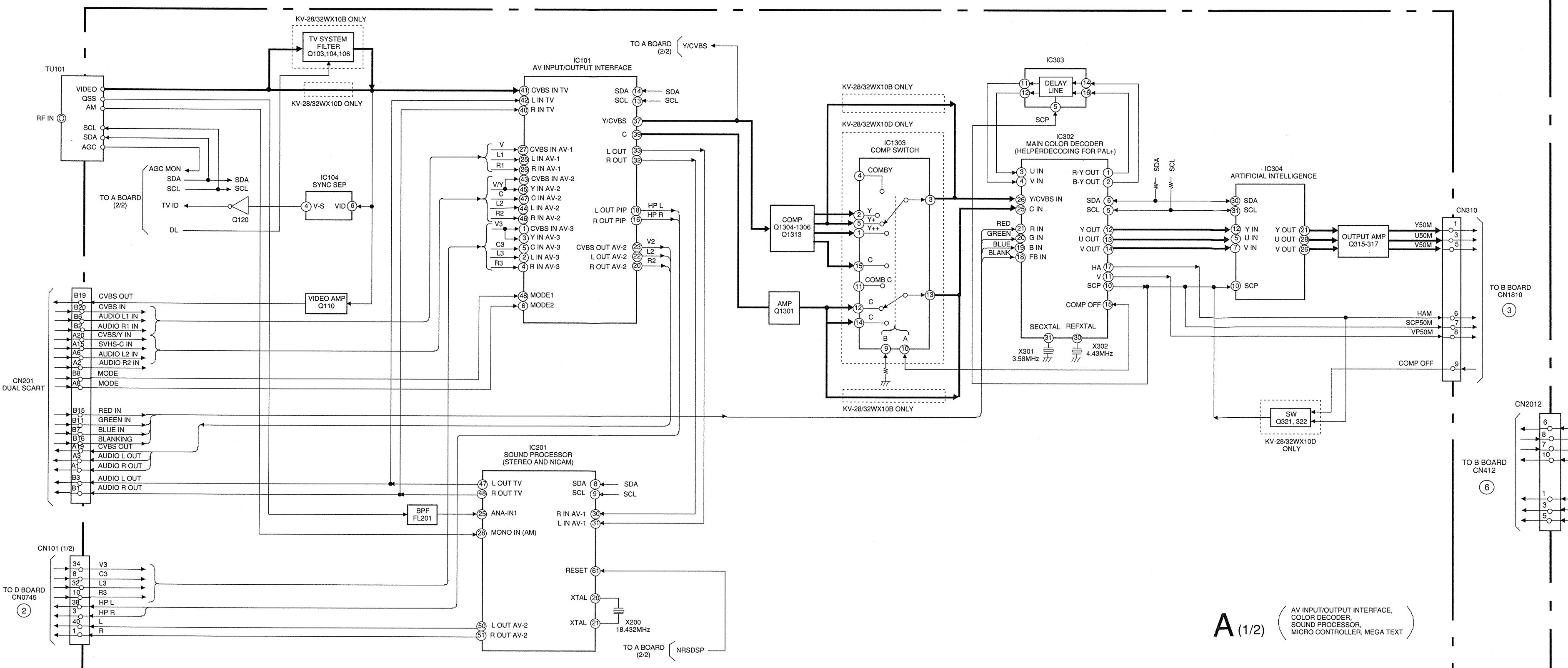
In TT mode, it is possible to remove the Menu from the screen by pressing the Speaker Off button once. Pressing the Speaker OFF button a second time will cause the menu to reappear . The Function is kept even when the menu is not displayed!!

00	Switch back to normal mode - TT mode off	31	no function
01	Switch service menu on	32	no function
02	Direct access to Noise reduction	33	no function
03	Set volume to 30%	34	no function
04	Service menu in "Service Mode"	35	no function
05	Service menu in "Production Mode"	36	no function
06	Set Volume to 80%	37	no function
07	Aging Mode	38	Screen Position
08	Shipping Condition	39	Reset Programme Table
09	Language Reset	40	See TT10
10	The TT number will be deleted	41	Picture Min
11	Direct access to Balance	42	no function
12	Direct access to Hue	43	no function
13	Display of TV set configuration	44	no function
14	Production Info Display	45	Set NVM to Protect mode
15	Read Analog from ROM	46	IR Channel Presetting Mode. The channel presetting can be done by a Special transmitter. Sequence: TT46 -> -PR Number select display appears Select Prog. No. from where the channel shall be stored. --> Now TV is waiting for IR sequence <-- --> If no IR transmission starts TT46 is released after 20 secs <--! Note: when TT46 is active, any transmission will be interpreted as PROG data !
16	Save Analog F in NVM	47	no function
17	This function presets the Labels for the AV sources: AV1, RGB, AV2, YC2, AV3, YC3, AV4, YC4.	48	no function
18	No function	49	New Initialize
19	No function	50	See TT10
20	See TT10	51	Strobo mode is activated.
21	Picture Rotation automatic function: (-4) -> (+4) -> 0	52	no function
22	Error Monitor Display	53	no function
23	Direct access to Sub Brightness Adjustment.	54	Direct access to Velocity Modulation VM (Production use)
24	Direct access to Sub Colour.	55	Slicer High
25	Status Menu Display	56	Slicer No
26	Text Character selection (Char set 06 -> West Europe)	57	Megatext Service Menu on
27	Text Character selection (Char set 38 -> East Europe)	58	MTX Small Framing Code Window
28	Text Character selection (Char set 40 -> West Europe) US English		
29	Text Character selection (Char set 55 -> West Europe) Turkish		
30	See TT10		

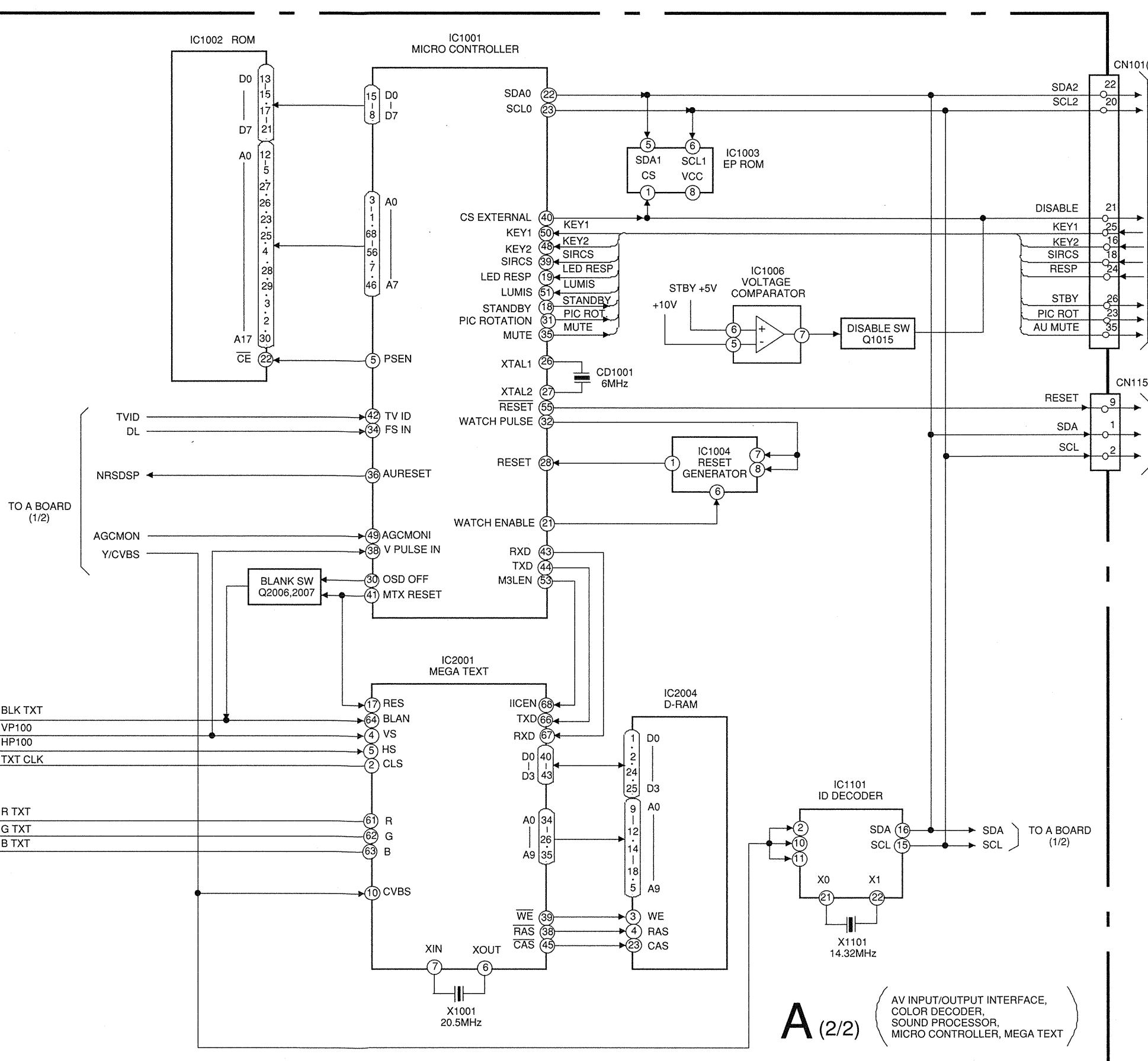
59	MTX Wide Framing Code Window
60	See TT10
61	no function
62	no function
63	no function
64	Reset all IIC Slave commands (Production use)
65	Reset stored error codes in NVM
66	Feature box and Pal Plus
67	no function
68	Ignore Errors - on
69	Ignore errors - off
70	See TT10
71	no function
72	no function
73	Megatext RGB textlevel one step decreased.
74	Megatext RGB textlevel one step decreased (max 1 steps down starting from E0h) (Production use)
75	no function
76	SDA9361
77	SDA9280
78	PIP
79	no function
80	See TT10
81	S87C654 Default data setting
82	TDA9170 Default data setting
83	SAA 7185WP Default data setting
84	TDA4780 Default data setting
85	TDA9144 Default data setting
86	TDA9143 Default data setting
87	no function
88	Char set Russian
89	Char set Russian (esc)
90	See TT10

SECTION 5
DIAGRAMS

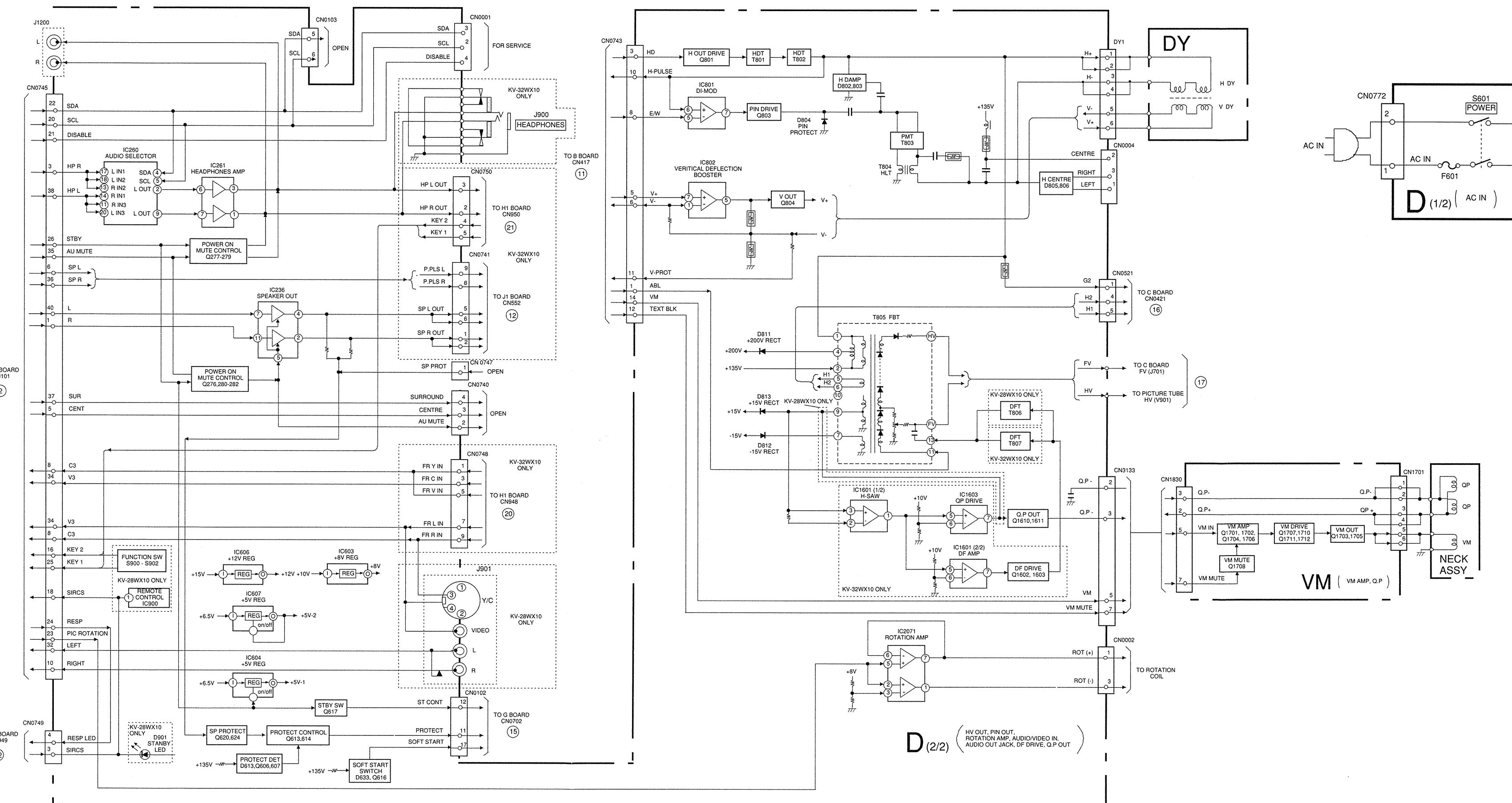
BLOCK DIAGRAM (1)



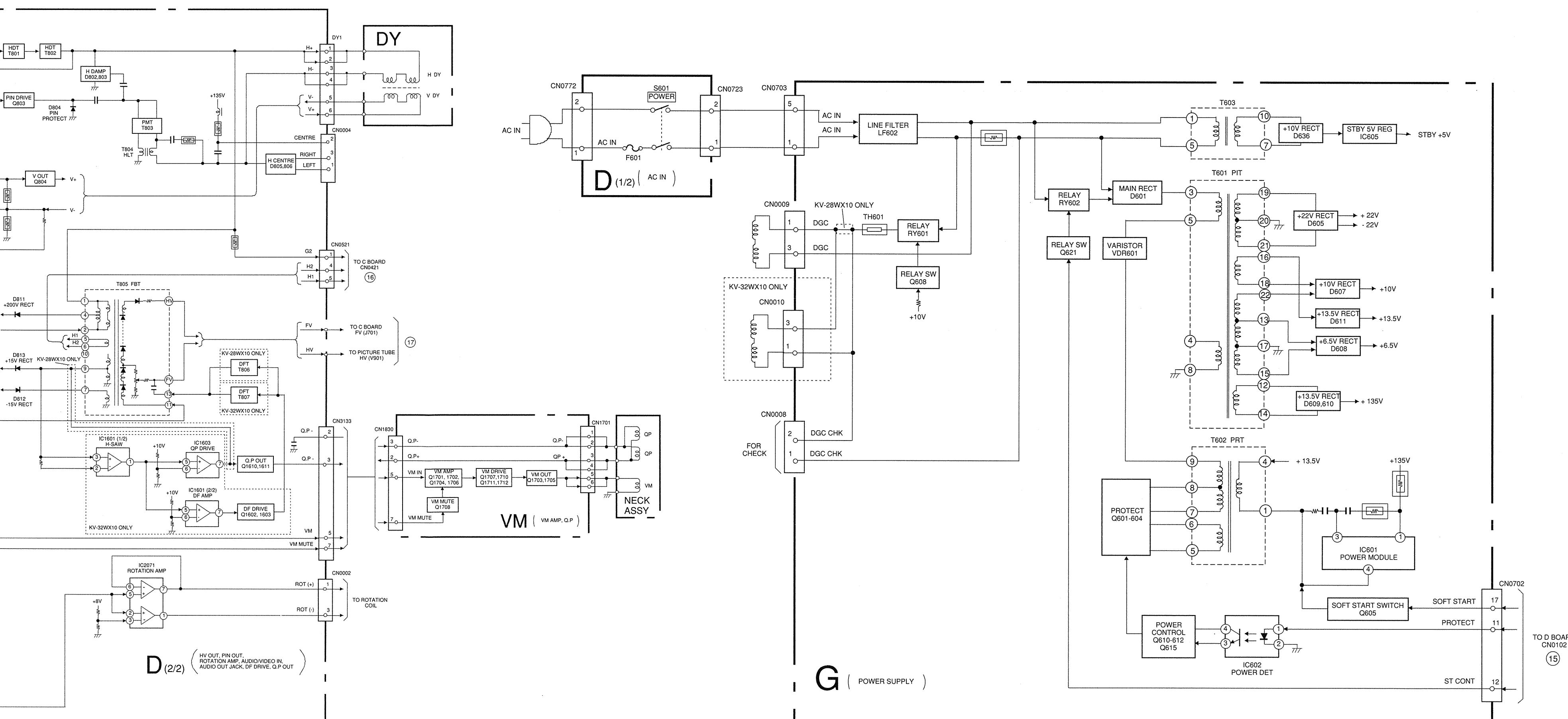
BLOCK DIAGRAM (2)



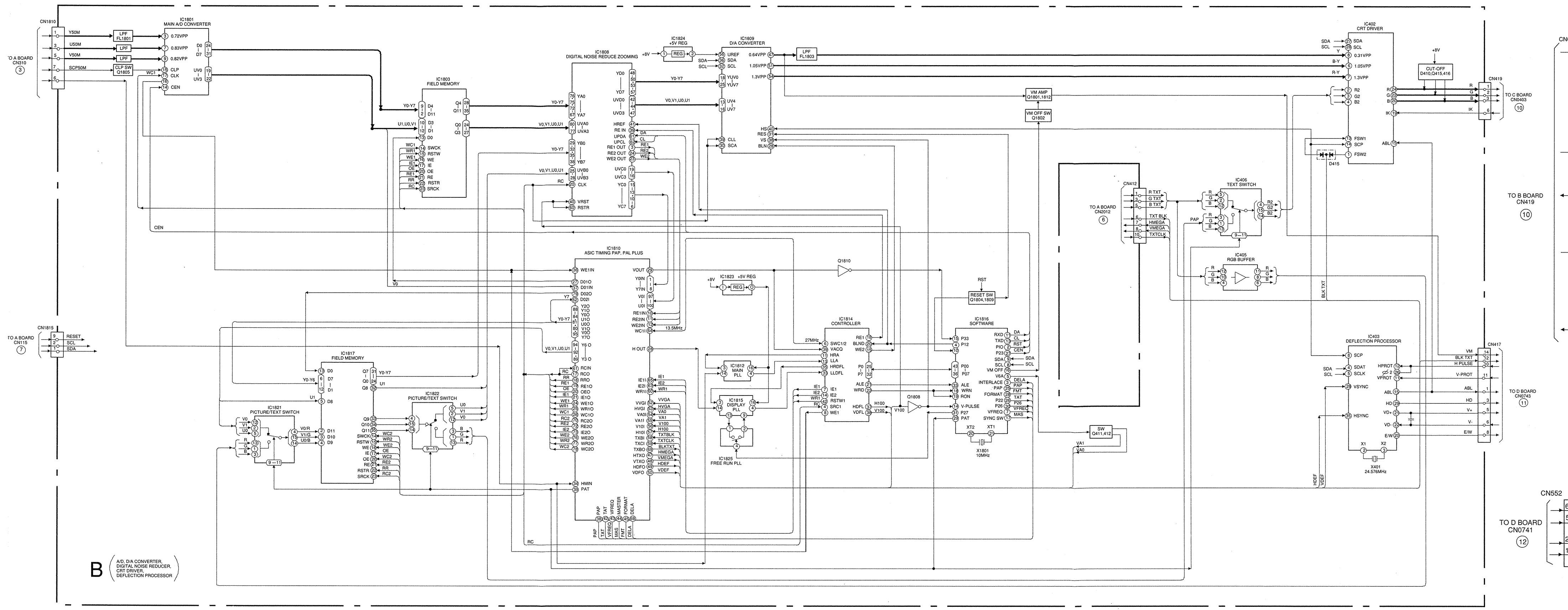
BLOCK DIAGRAM (3)



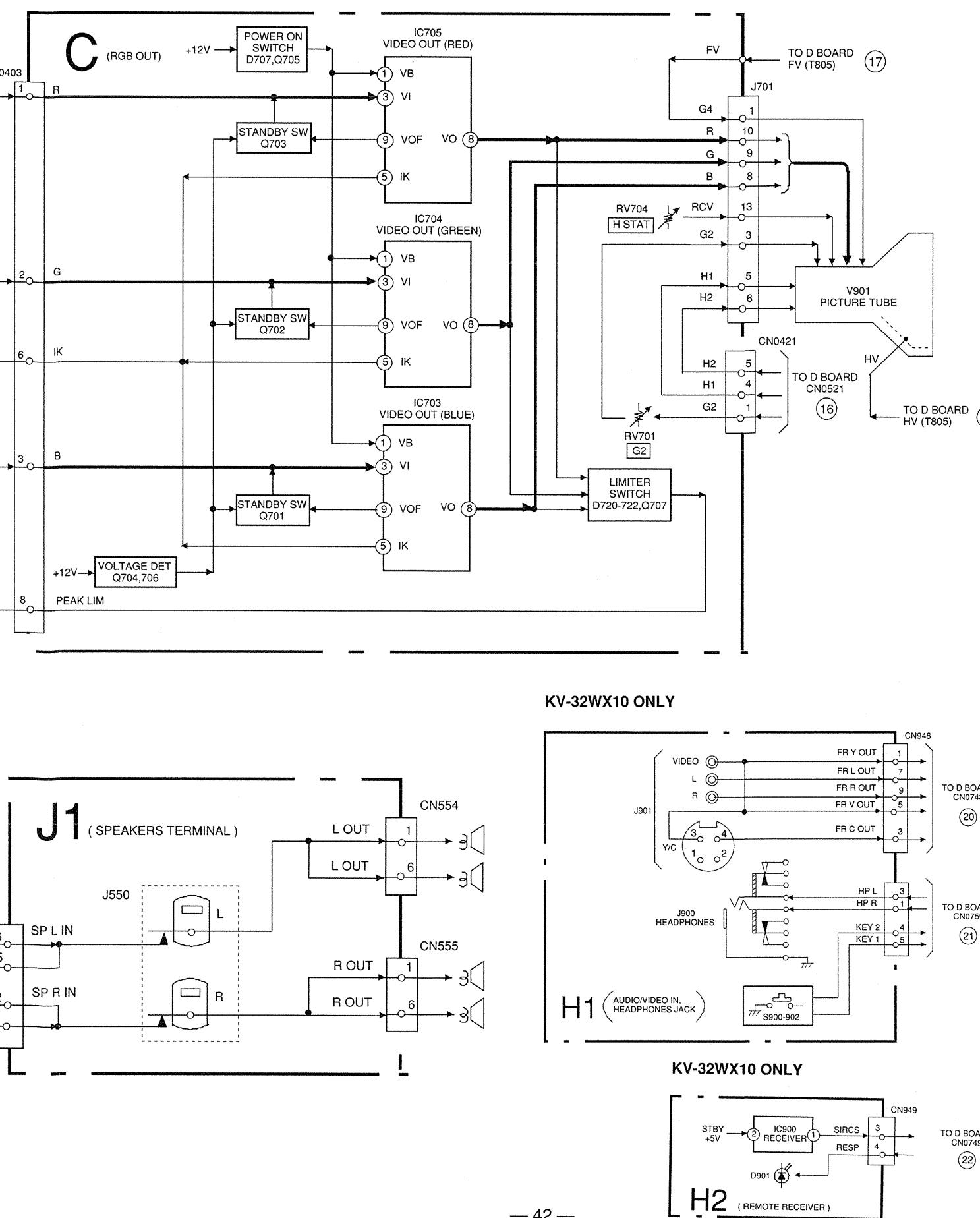
BLOCK DIAGRAM (4)

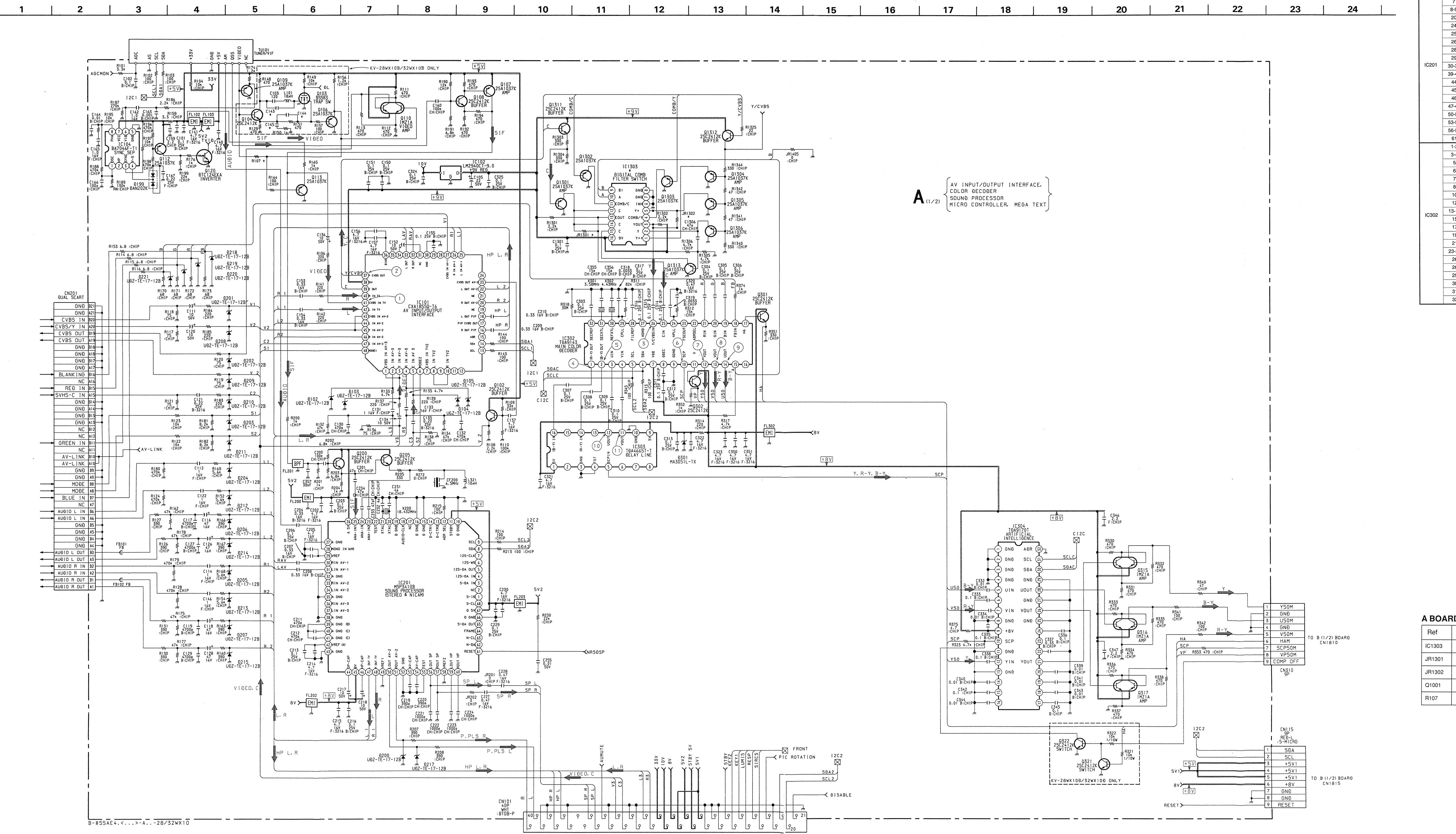
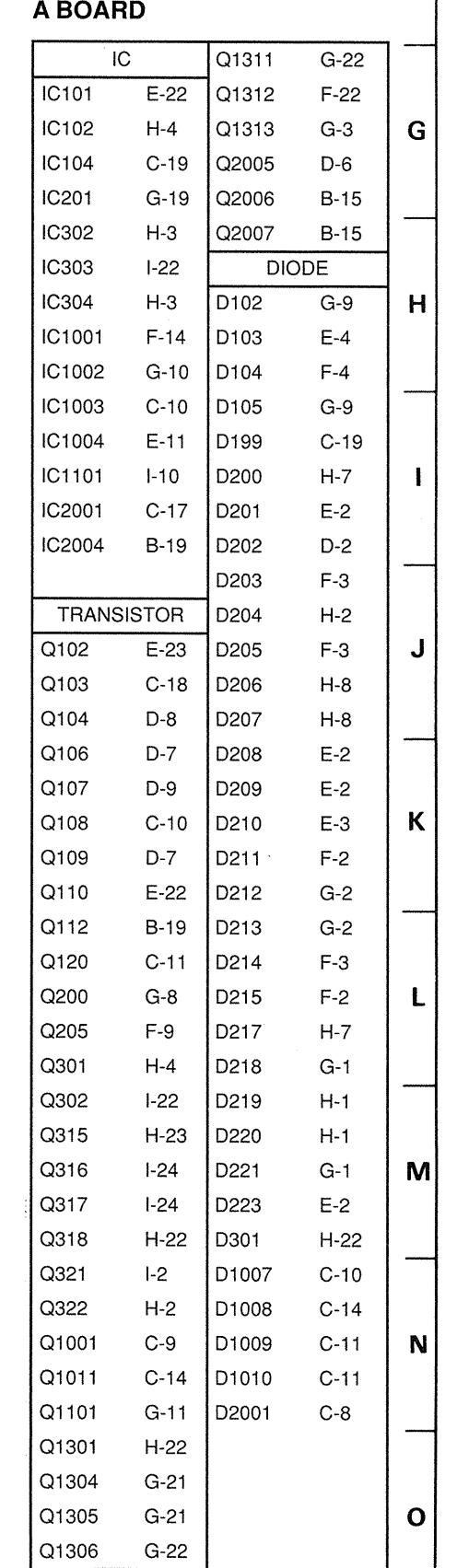


BLOCK DIAGRAM (5)

B
(
A/D, D/A CONVERTER,
DIGITAL NOISE REDUCER,
CRT DRIVER,
DEFLECTION PROCESSOR)

BLOCK DIAGRAM (6)

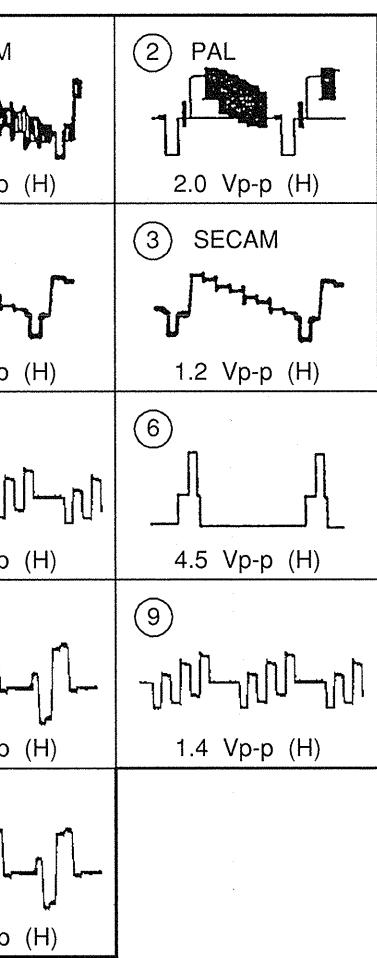




VOLTAGE TABLE

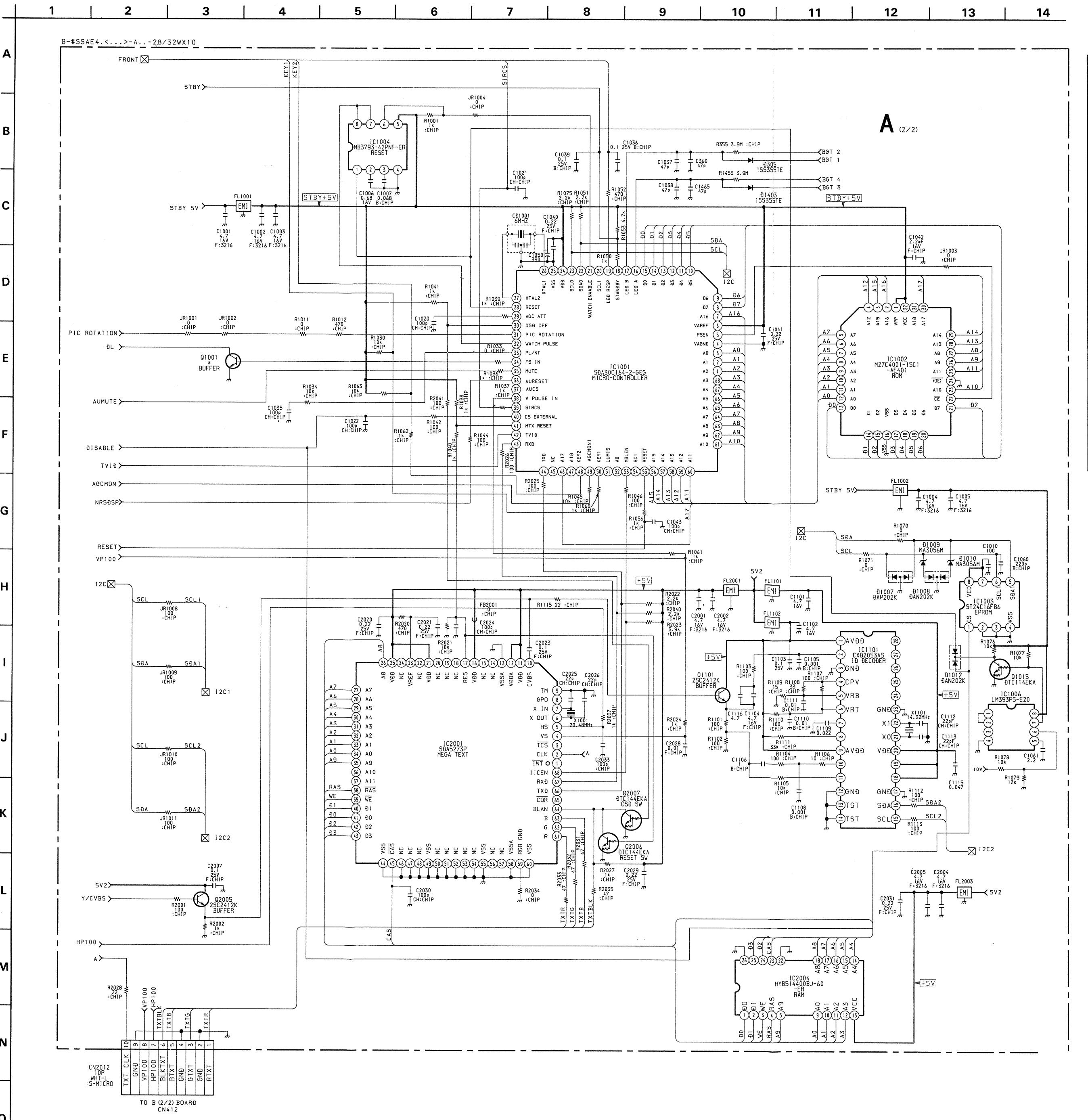
V) 1

MS A BOARD



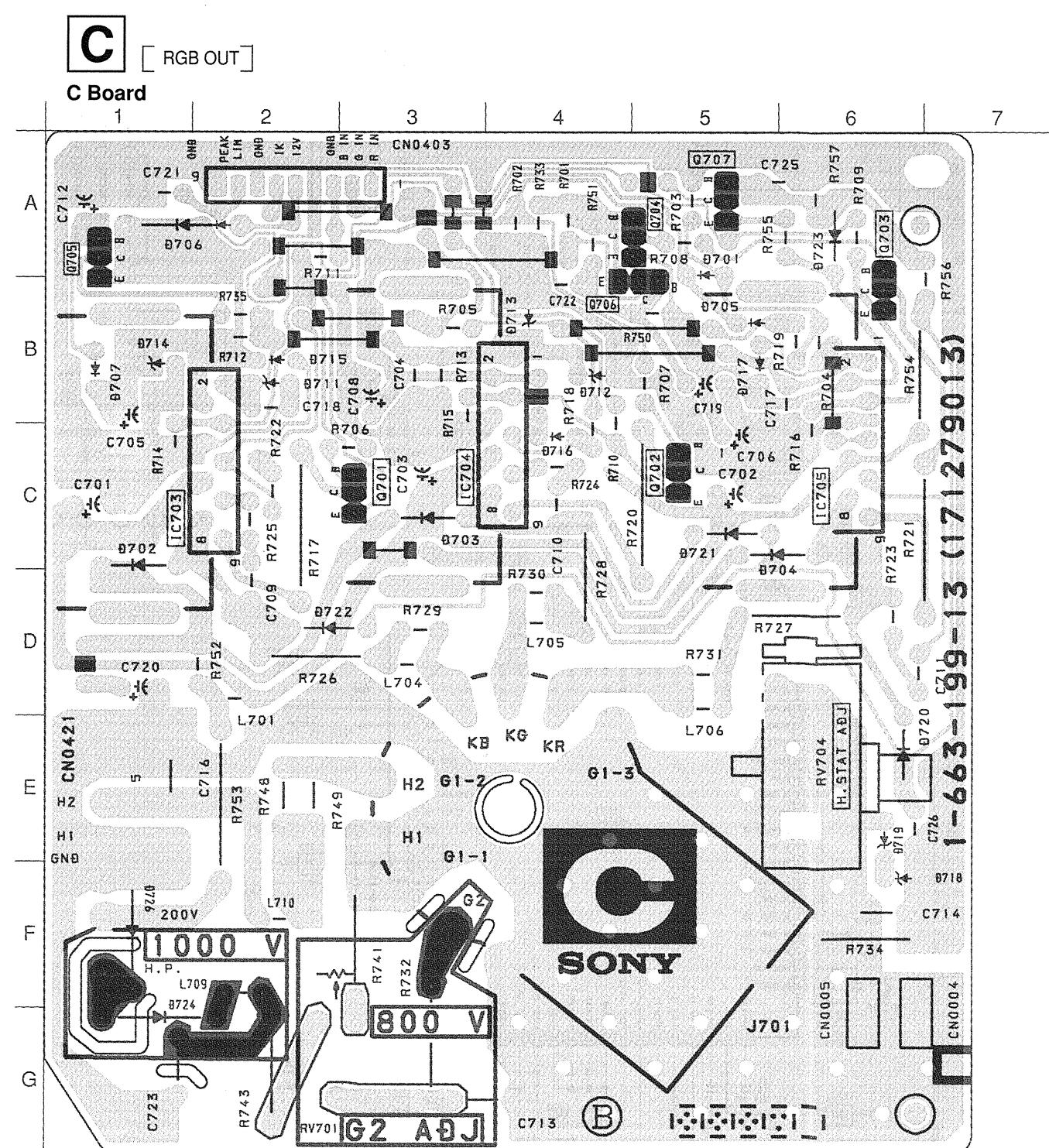
ARK

2WX10B	KV-32WX10D
-	MC14052BDR2
CHIP	-
CHIP	-
2412K	-
-	O : CHIP

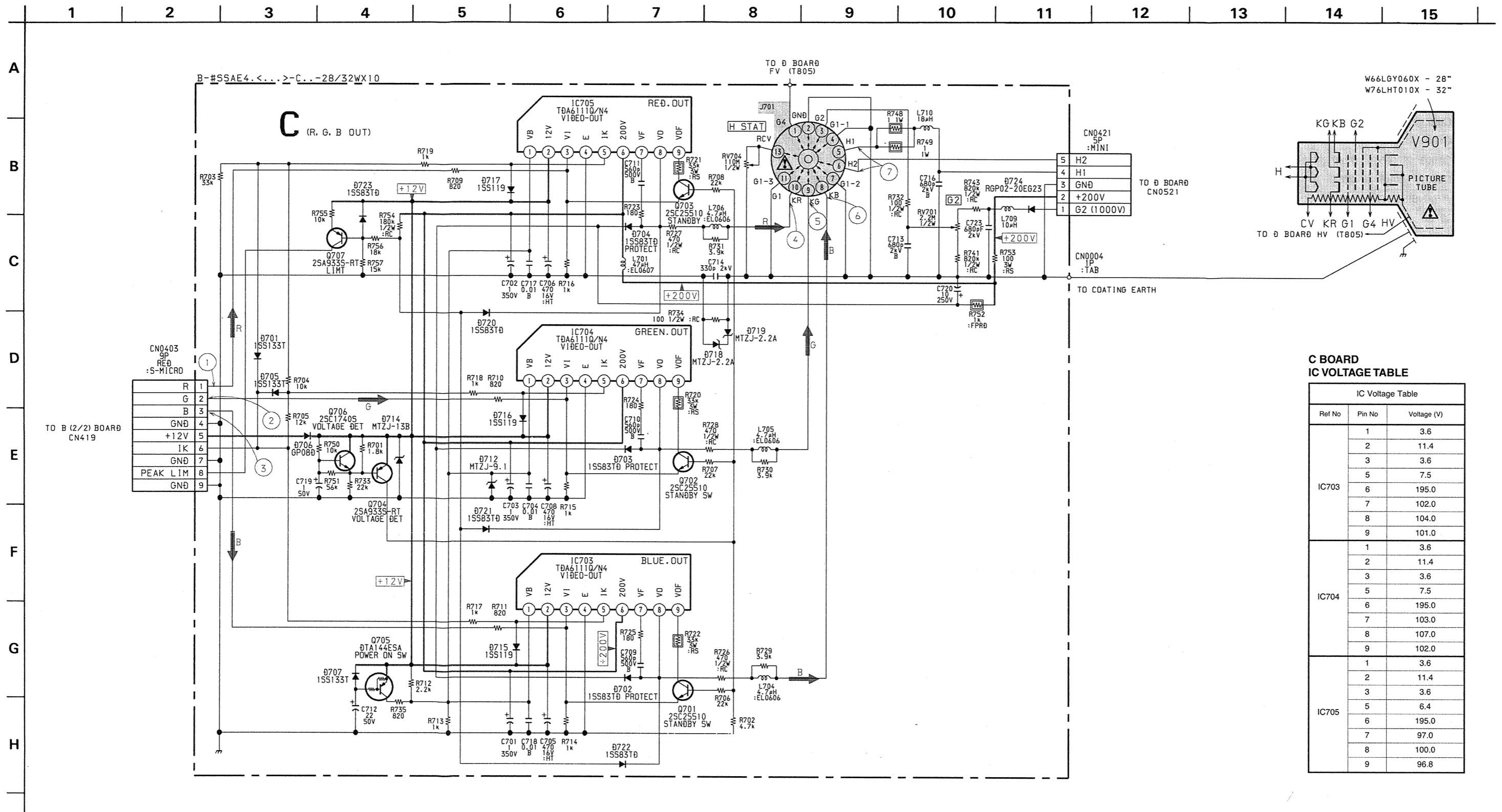


(2/2) BOARD IC VOLTAGE TABLE			
IC Voltage Tab			
Ref No	Pin No	Voltage (V)	Ref F
IC101	1-5	4.6	
	7-8	4.6	
	10	4.6	
	17	4.6	
	23	4.6	
	29	4.6	
	31	4.6	
	34	4.6	
	36	4.6	
	38	9.0	
IC1001	40-47	4.6	
	5	2.4	
	6	4.8	
	19	3.6	
	20	0.1	
	24	4.8	
	26	2.1	
	27	2.3	
	28	4.6	
	30	0.1	
IC2001	31-32	2.4	
	33	4.8	
	36	4.1	
	38	0.1	
	39	0.6	
	40	4.8	
	41	0.1	
	42	4.8	
	43	4.4	
	44	4.1	
	48	4.8	
	49	2.2	
	50	4.8	
	52	4.8	
	54	4.8	

		A (2/2) BOARD TRANSISTOR VOLTAGE		
	Voltage (V)	Transistor Voltage Tab		
		Ref No	B Base	C Collector
0	4.8	Q1001	0.1	0.7
	1.1	Q1004	0.1	0.7
	0.9	Q1101	3.3	5.0
0	0.3			
	2.4			
	1.4			
	4.7			
0	1.7			
	1.5			
	4.0			
0	4.7			
	2.5			
	2.3			
	0.4			
	0.3			
	1.6			
	4.0			
	1.0			
2	4.7			
	4.7			
	4.7			
	2.9			
	4.7			
	4.7			
	4.7			



C BOARD	
IC	
IC703	C-1
IC704	C-3
IC705	C-6
TRANSISTOR	
Q701	C-3
Q702	C-5
Q703	A-6
Q704	A-5
Q705	A-1
Q706	B-4
Q707	A-5
DIODE	
D701	A-5
D702	C-1
D703	C-3
D704	C-6
D705	B-5
D706	A-1
D707	B-1
D712	B-4
D714	B-1
D715	B-2
D716	C-4
D717	B-6
D718	F-6
D719	E-6
D720	E-6
D721	C-5
D722	D-2
D723	A-6
D724	F-1
VARIABLE RESISTOR	
RV701	G-1
RV704	F-6



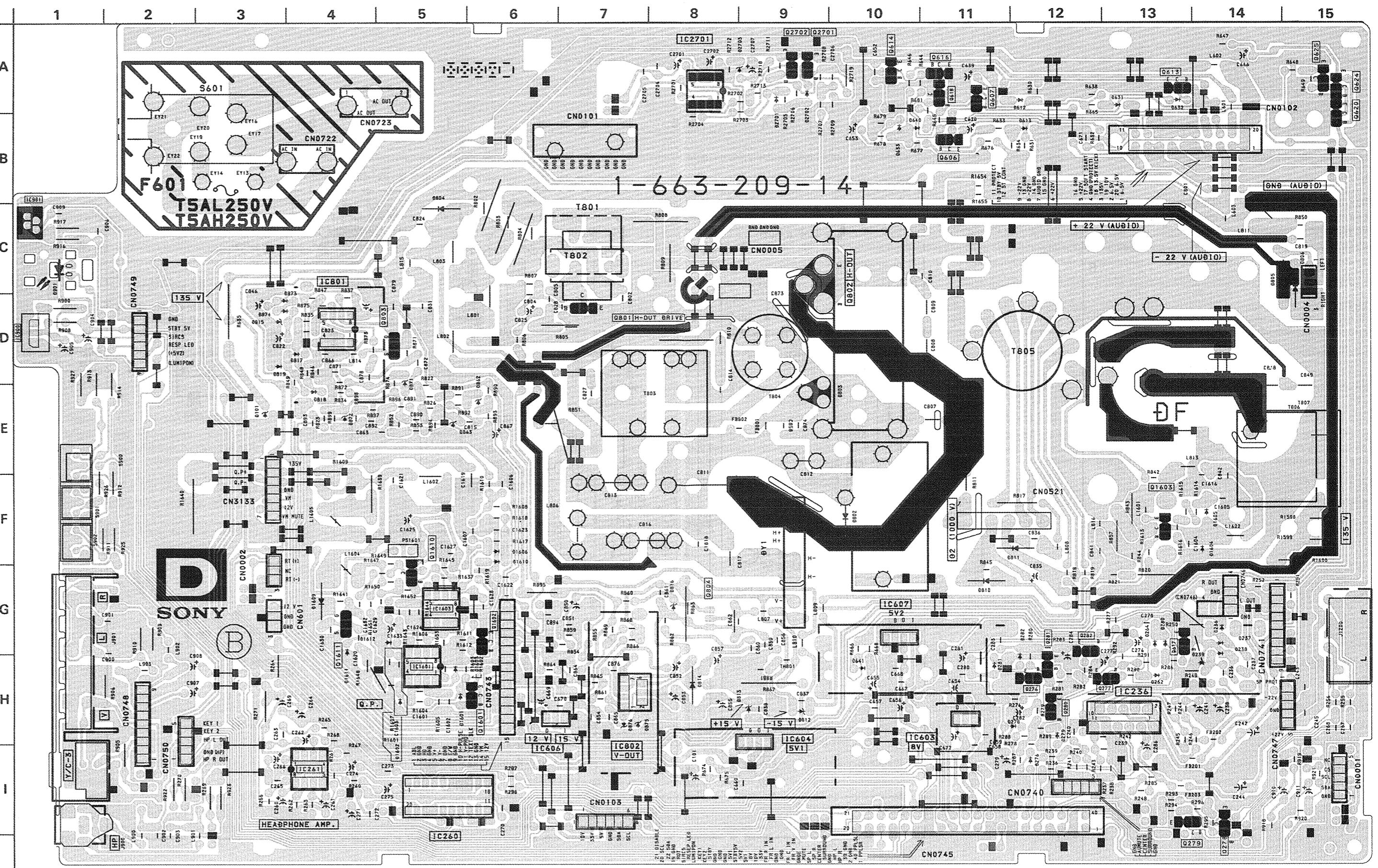
D AC IN, HV OUT, PIN OUT, ROTATION AMP,
AUDIO OUT JACK, SIRCS RECEIVER, FUNCTION SW

NOTE:
The circuit indicated as left contains high voltage of over
600 Vp-p. Care must be paid to prevent an electric shock in
inspection or repairing.

D BOARD

IC	DIODE
IC236 H-13	D101 E-3
IC260 I-5	D236 G-14
IC261 I-4	D237 G-14
IC603 H-11	D238 G-14
IC604 H-9	D239 G-14
IC606 H-7	D262 H-13
IC607 G-10	D264 G-13
IC801 C-4	D276 I-12
IC802 H-8	D278 H-12
IC1601 H-5	D279 H-12
IC1603 G-5	D280 G-13
IC2701 A-8	D281 H-12
TRANSISTOR	
Q276 H12	D612 A-12
Q277 H-13	D613 B-12
Q278 I-14	D631 A-13
Q279 I-14	D632 A-14
Q280 H-12	D633 B-11
Q281 G-12	D802 F-10
Q282 G-13	D803 E-10
Q606 B-11	D804 B-5
Q607 A-11	D805 C-15
Q613 A-13	D806 C-15
Q614 A-10	D810 G-11
Q616 A-11	D811 F-12
Q617 G-13	D812 H-9
Q618 A-11	D813 H-9
Q620 A-15	D814 H-8
Q624 A-15	D815 D-3
Q801 D-7	D816 G-8
Q802 C-10	D817 D-4
Q803 D-5	D818 E-4
Q804 G-8	D819 D-3
Q1601 H-6	D871 D-5
Q1602 G-6	D873 D-4
Q1603 F-13	D874 D-3
Q1610 F-5	D1602 H-5
Q1611 G-4	D1603 H-6
Q2701 A-9	D1604 F-14
Q1605 F-14	D1605 F-14
Q1609 G-4	D1609 G-4
Q1611 H-4	D1611 H-4
D2701 A-9	D2702 A-9

D Board



A

B

C

D

E

F

G

H

1

J

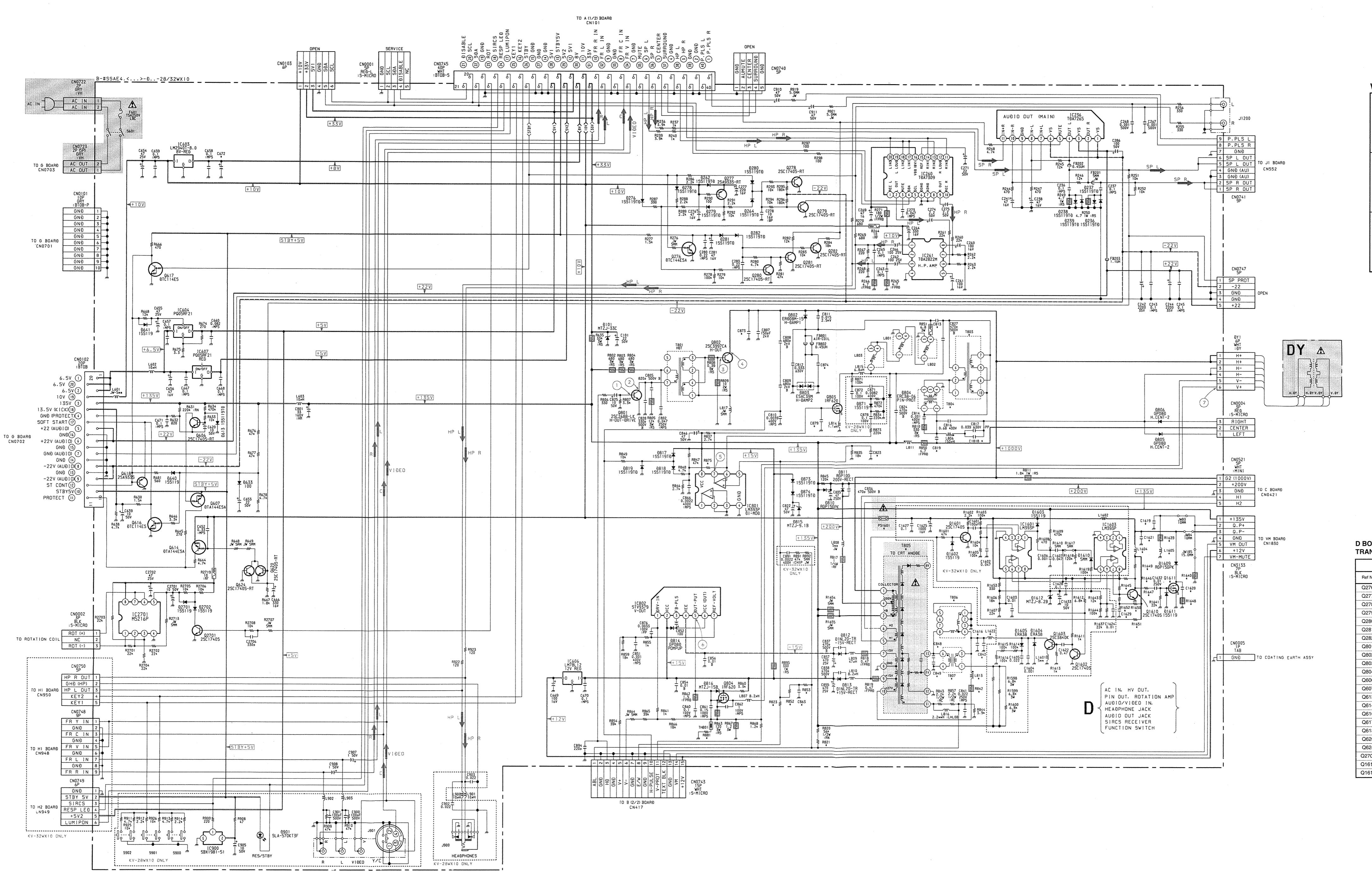
K

L

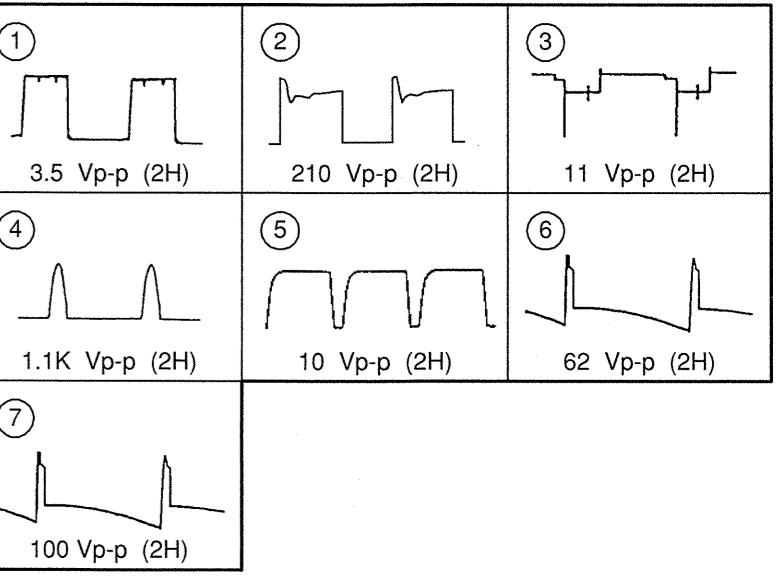
M

N

0

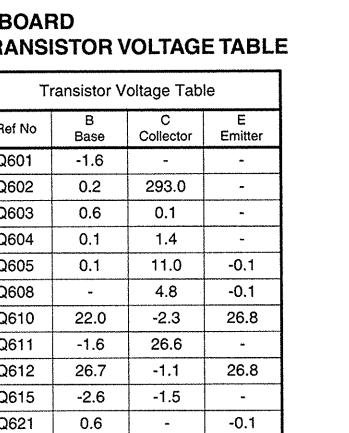


WAVEFORMS D BOARD

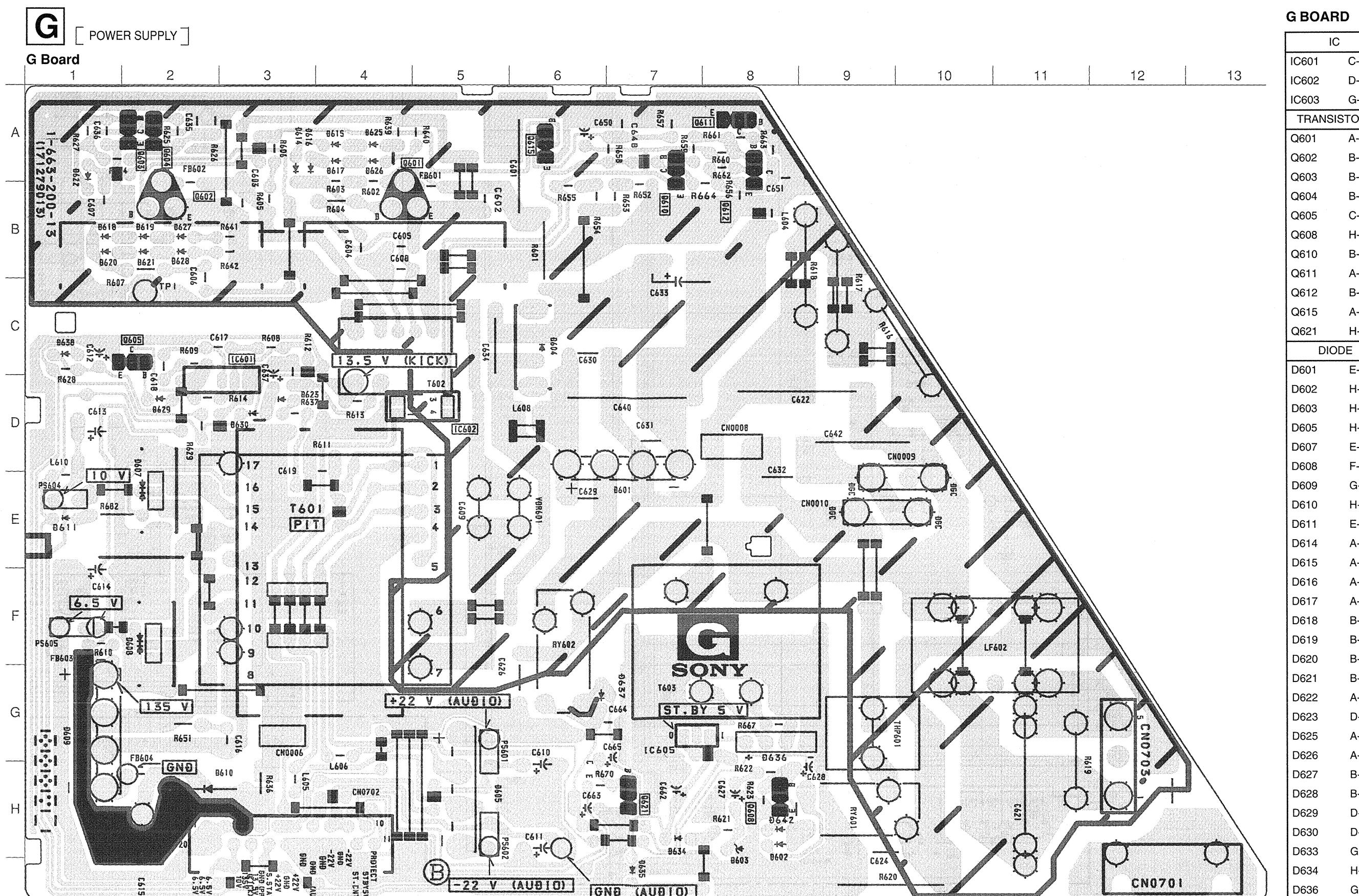
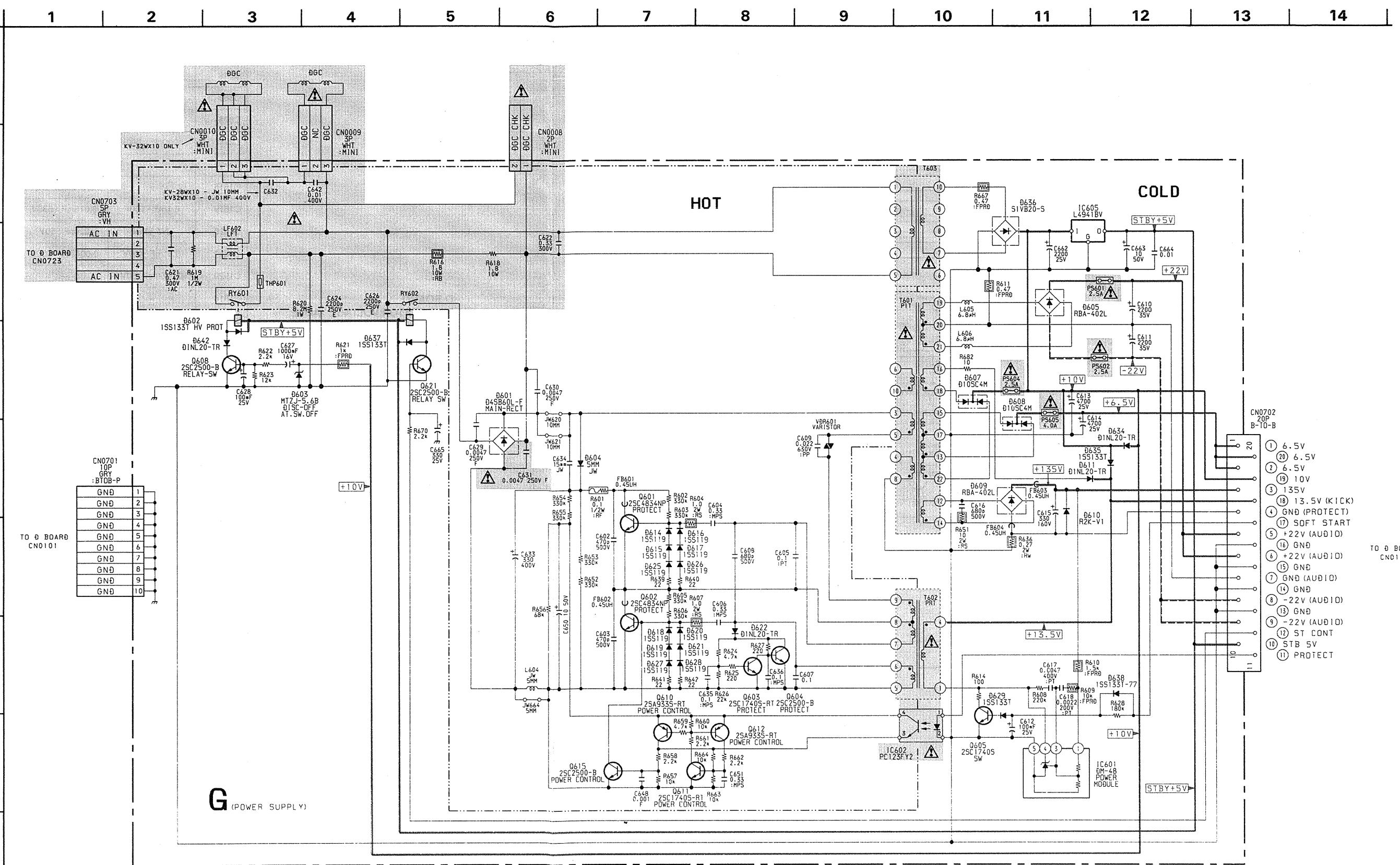


BOARD * MARK

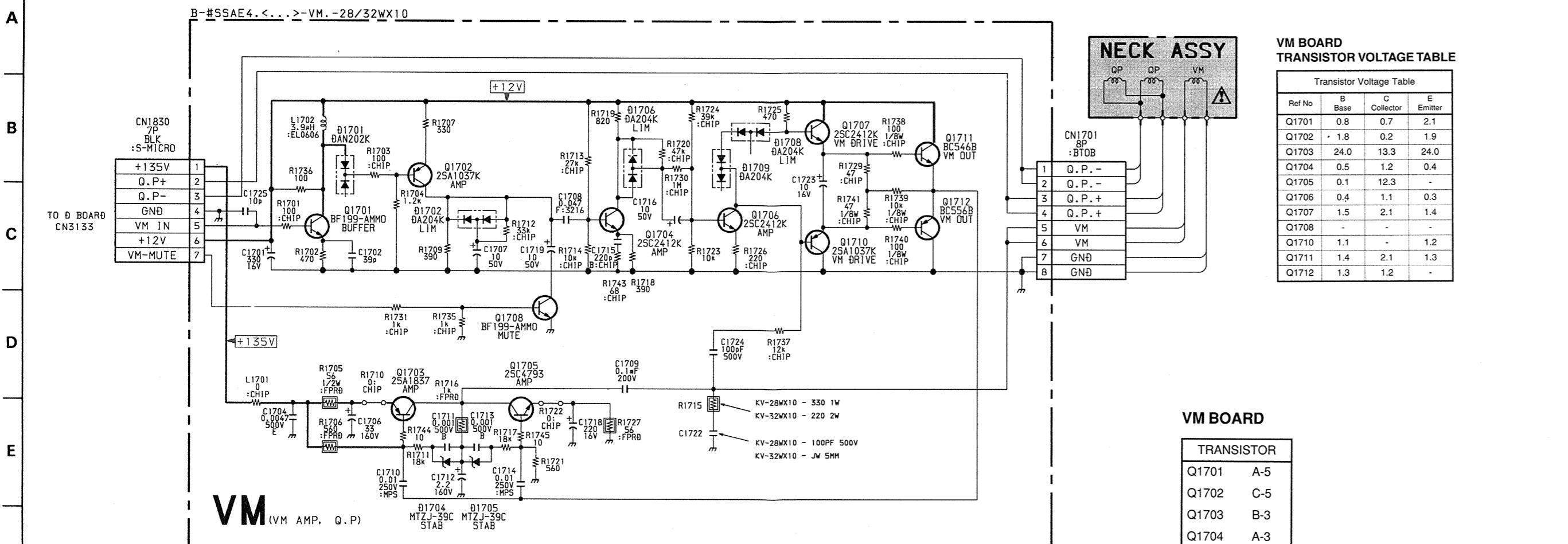
Ref	KV-28WX10B KV-28WX10D	KV-32WX10B KV-32WX10D
C672	–	47mF 16V
C813	0.68mF 400V	0.82mF 400V
C819	0.022mF 250V	0.033mF 250V
C823	0.01mF 50V	0.1mF 50V
C842	0.0047mF 400V	–
C848	–	150pF 2KV
C849	–	150pF 2KV
C863	–	0.1mF 50V
C873	–	330pF 2KV
C874	1000pF 500V	0.0047mF 630V
C879	–	100pF 50V
C1616	–	0.0018mF 630V
C1619	0.1mF 100V	0.018mF 630V
C1620	JW 5MM	220pF 50V
C1621	0.01mF 400V	0.0047mF 630V
C1629	0.0068mF 50V	–
C1818	–	0.0027mF 630V
L813	10mmh	–
L1604	6.8mmh	–
L1605	6.8mmh	Coil
L1622	3.3mmh	4.7mmh
PS1601	JW 5MM	Link IC
Q1611	2SC4793	IRF620
R821	6.8K 1/4W	JW 5MM
R823	1.8K 1/4W	3.3K 1/4W
R842	33 1/4W	–
R852	390K 1/4W	180K 1/4W
R853	220K 1/4W	180K 1/4W
R875	3.3K 1/4W	JW 5MM
R881	4.7 1/4W	22 1/4W
R1639	–	220 2W
R1640	–	1.5K 3W
R1645	68K 1/4W	4.7K 1/4W
R1646	2.2K 1/4W	680 1/4W
R1647	JW 5MM	560 1/4W
R1648	10K 1W	JW 5MM
R1649	10K 1/4W	–
R1650	10K 1/4W	–
R1651	33 1/4W	–
R1652	2.2K 1/4W	–
T805	NX-4003	NX-4123
T806	Ferrite (DFT)	–
T807	–	Ferrite (DFT)



NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.



1 2 3 4 5 6 7 8 9 10 11 12



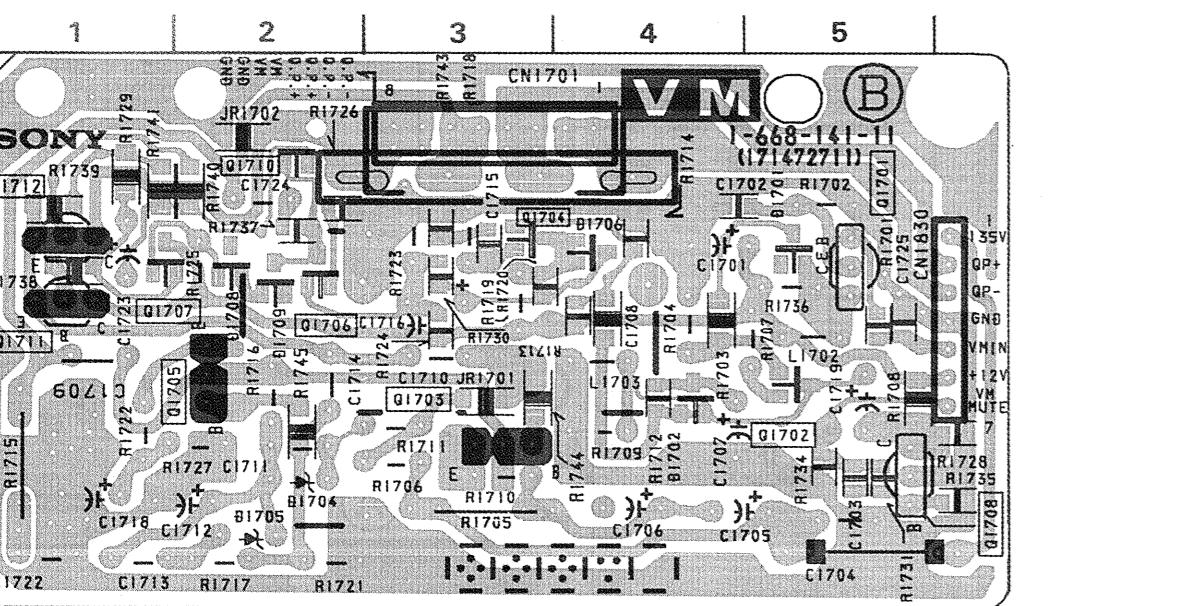
VM BOARD TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table

Ref No	B	C	E
	Base	Collector	Emitter
Q1701	0.8	0.7	2.1
Q1702	1.8	0.2	1.9
Q1703	24.0	13.3	24.0
Q1704	0.5	1.2	0.4
Q1705	0.1	12.3	-
Q1706	0.4	1.1	0.3
Q1707	1.5	2.1	1.4
Q1708	-	-	-
Q1710	1.1	-	1.2
Q1711	1.4	2.1	1.3
Q1712	1.3	1.2	-

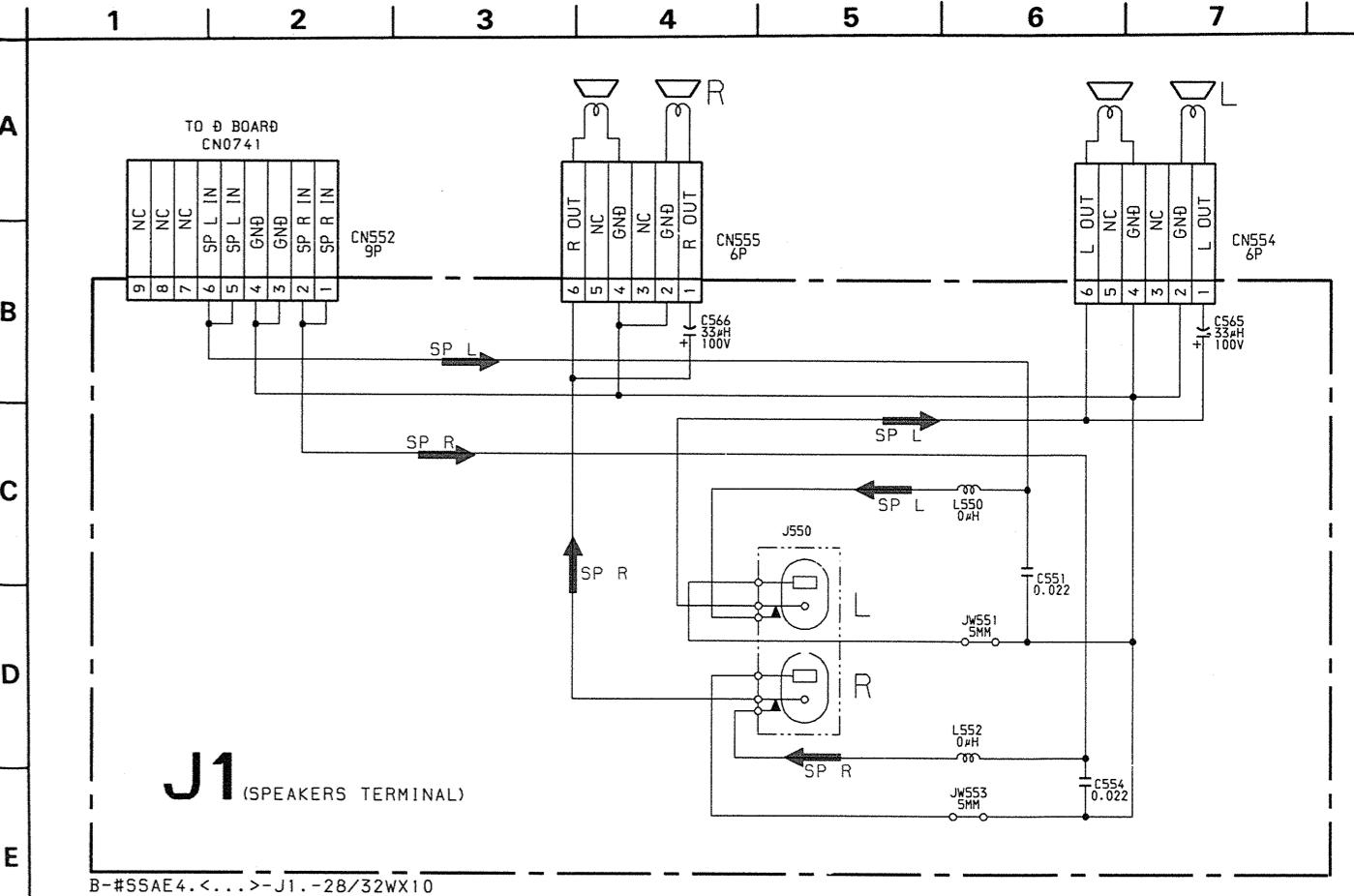
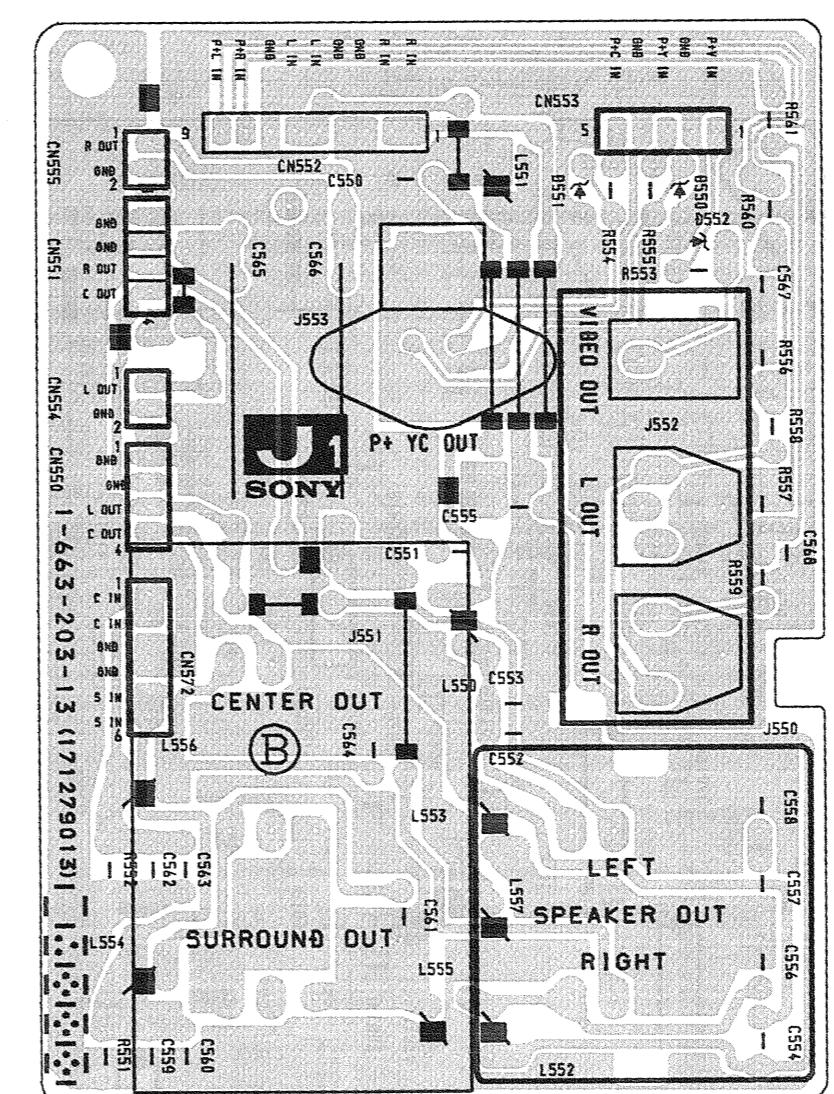
VM [VM OUT, Q.P.]

VM Board



J1 [SPEAKERS TERMINAL]

J1 Board

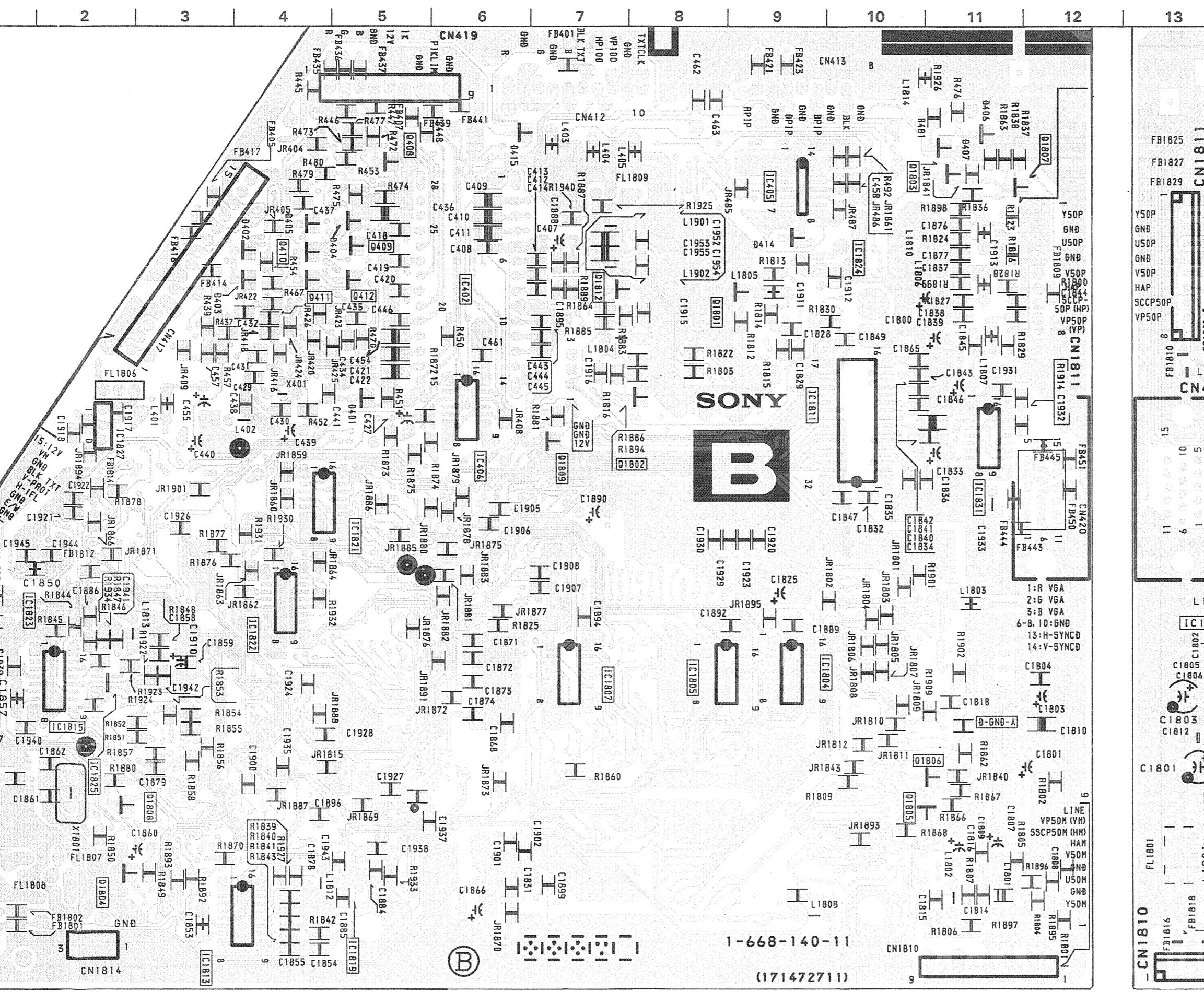


3

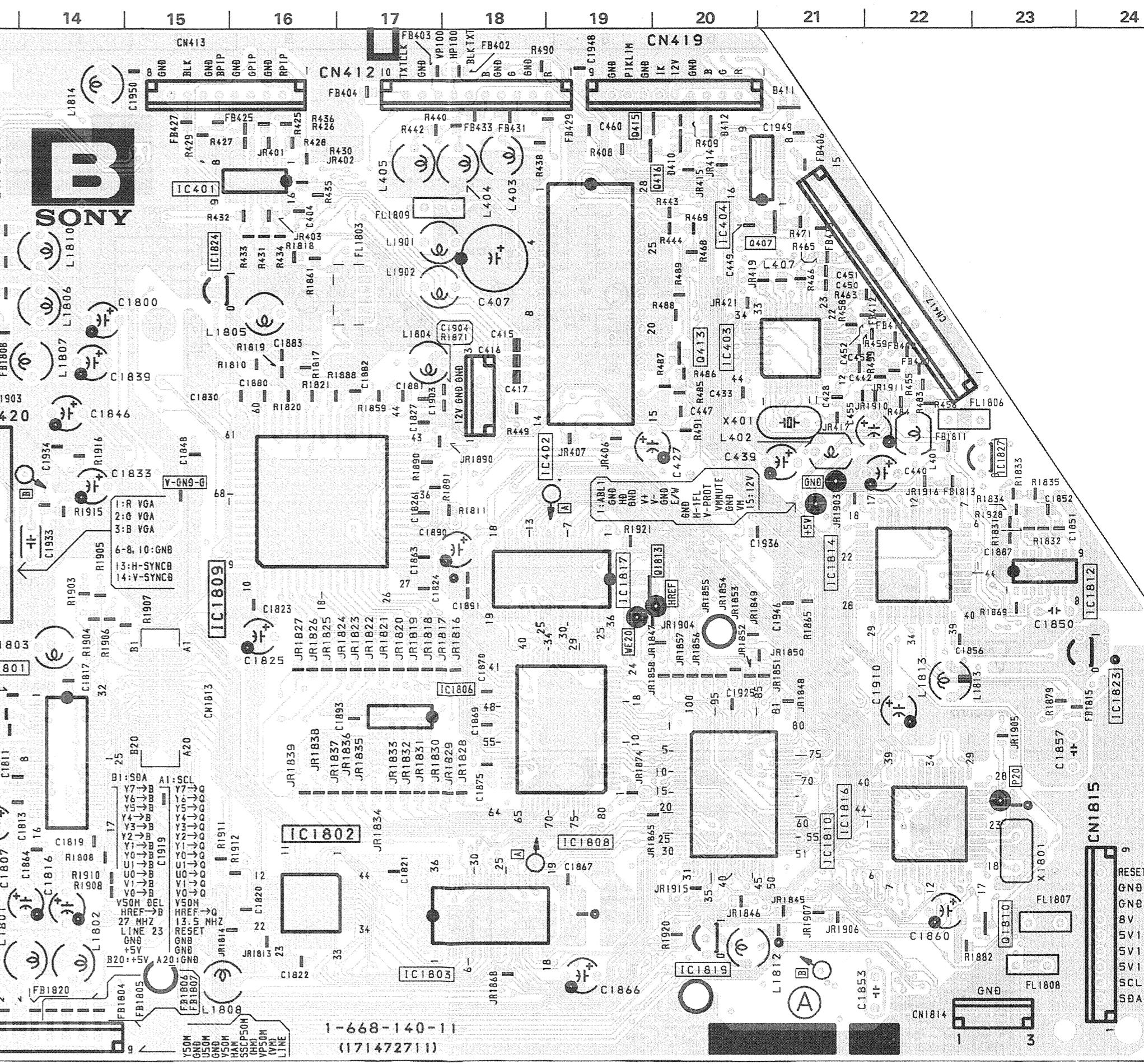
A/D, D/A CONVERTER, DIGITAL NOISE REDUCER, CRT DRIVER, DEFLECTION PROCESSOR

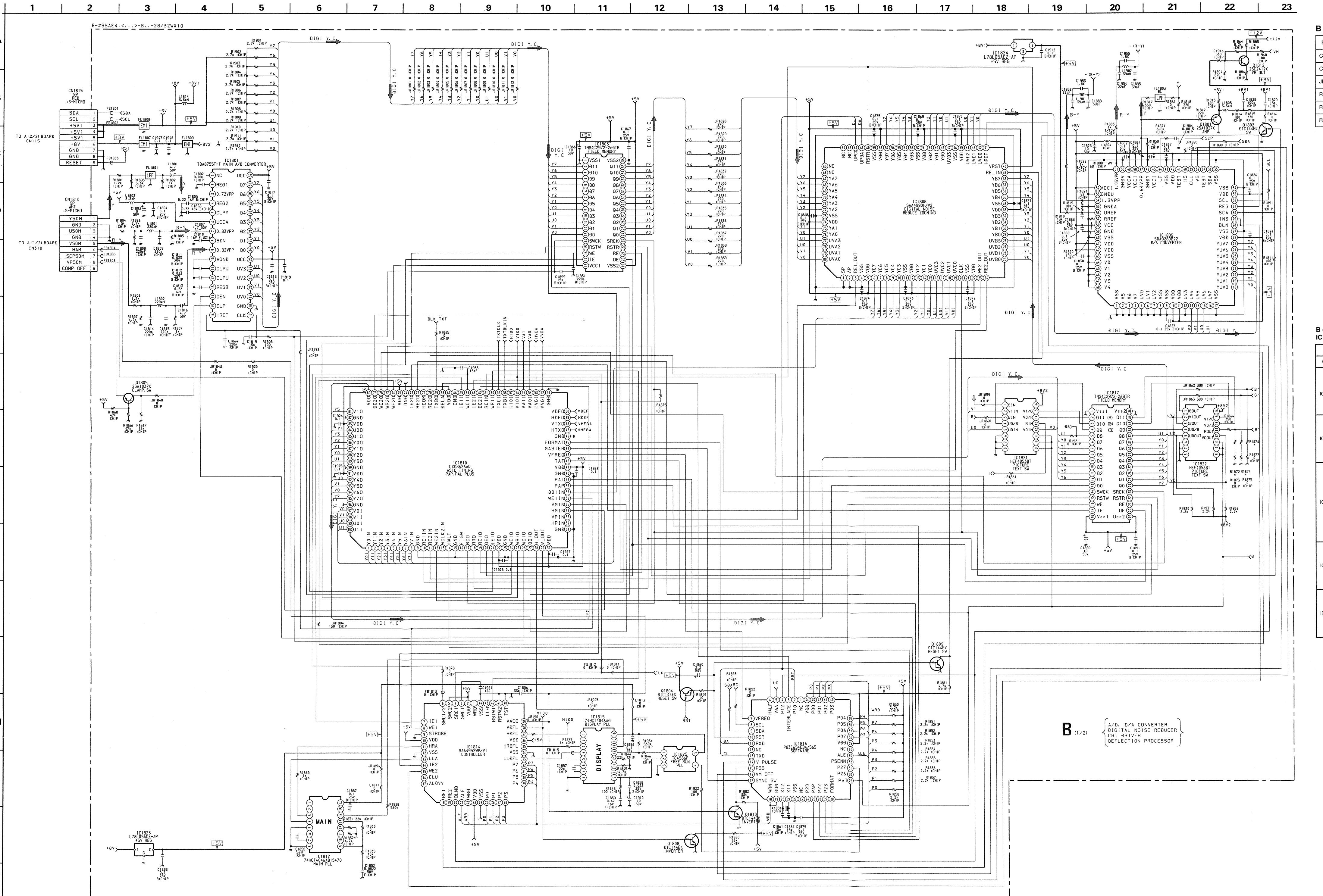
IC		TRANSISTOR	
02	C-6	Q411	C-4
03	D-20	Q412	C-5
05	B-9	Q415	A-19
06	E-6	Q416	B-20
801	G-13	Q1801	C-8
803	I-17	Q1802	D-8
808	H-19	Q1804	I-2
809	E-15	Q1805	H-10
810	I-21	Q1808	H-2
812	F-24	Q1809	E-7
814	F-21	Q1810	I-23
815	H-2	Q1812	C-8
816	H-22		
817	E-19		DIODE
821	F-5	D401	D-5
822	G-4	D402	C-3
823	F-1	D403	C-3
824	C-10	D410	B-20
825	H-2	D411	A-21
		D412	A-20
		D414	C-9
		D415	B-7

Inductor Side >



Component Side >





RD * MARK			
KV-28WX10B	KV-28WX10D	KV-32WX10B	KV-32WX10D
0.039mF 25V	0.039mF 25V	-	-
0.01mF 50V	0.01mF 50V	-	-
1K 1/10W	1K 1/10W	O : CHIP	O : CHIP
82 1/10W	82 1/10W	100 1/10W	100 1/10W
82 1/10W	82 1/10W	100 1/10W	100 1/10W
82 1/10W	82 1/10W	100 1/10W	100 1/10W

RD * MARK

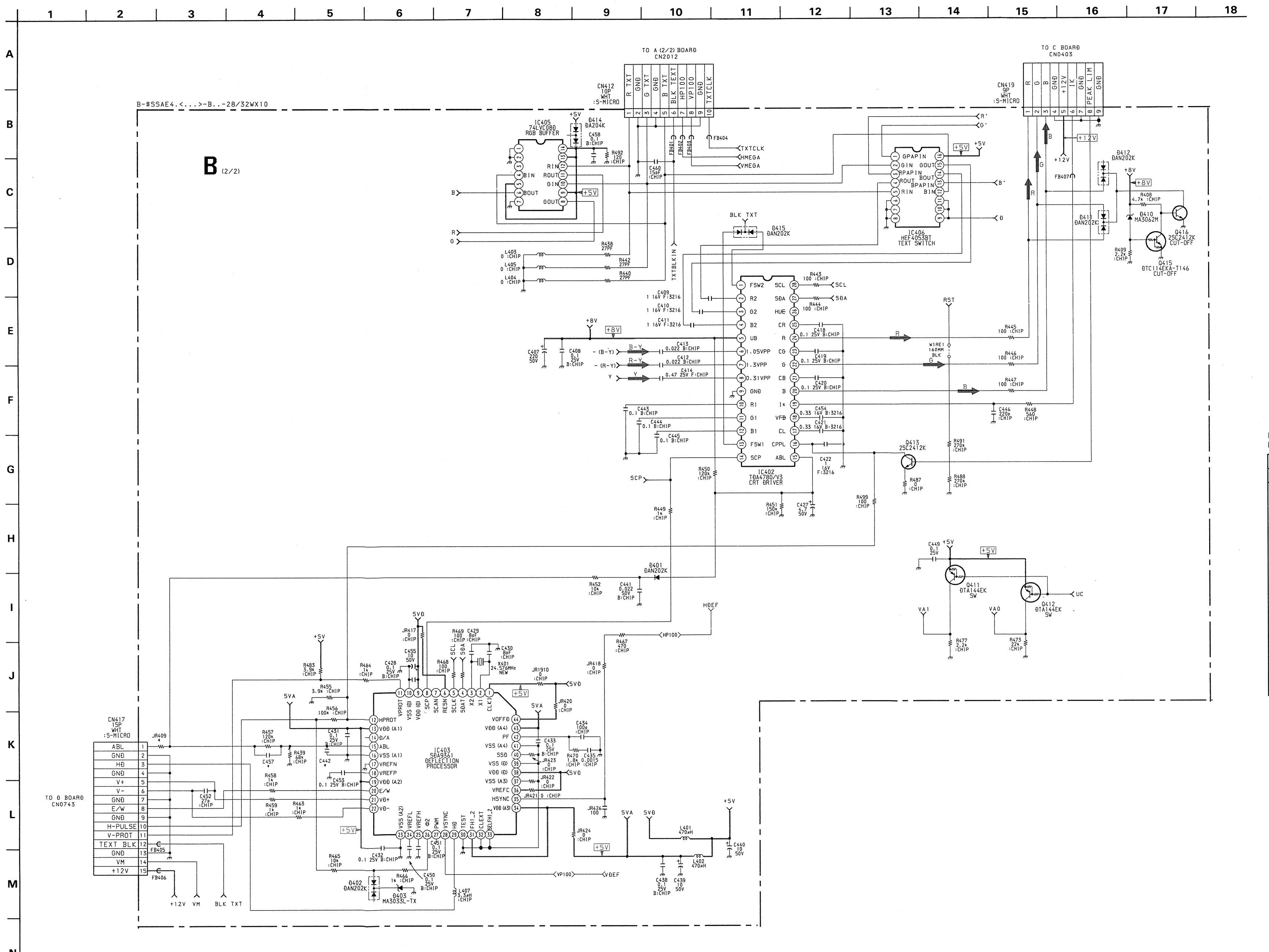
KV-28WX10B	KV-28WX10D	KV-32WX10B	KV-32WX10D
0.039mF 25V	0.039mF 25V	-	-
0.01mF 50V	0.01mF 50V	-	-
1K 1/10W	1K 1/10W	O : CHIP	O : CHIP
82 1/10W	82 1/10W	100 1/10W	100 1/10W
82 1/10W	82 1/10W	100 1/10W	100 1/10W
82 1/10W	82 1/10W	100 1/10W	100 1/10W

BOARD

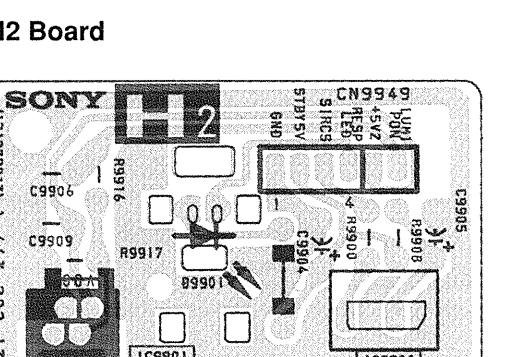
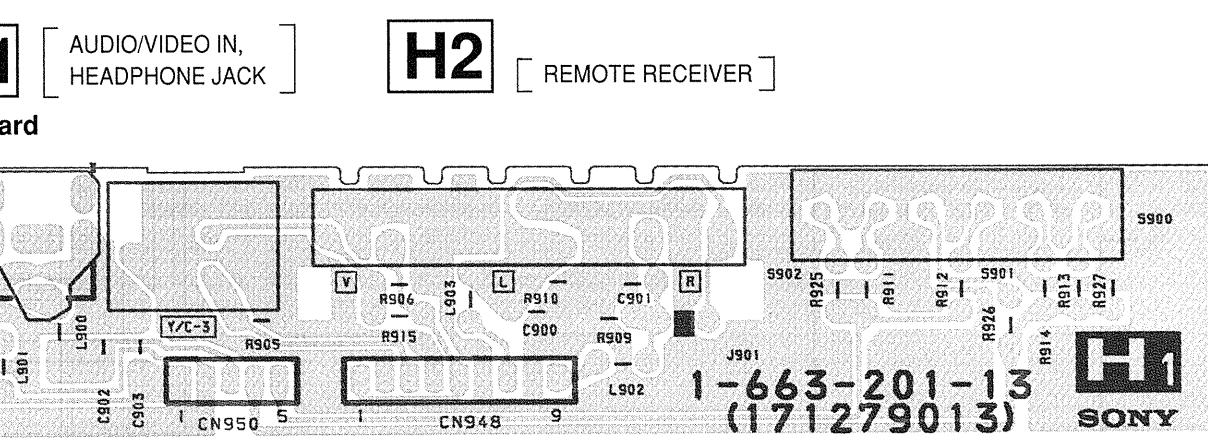
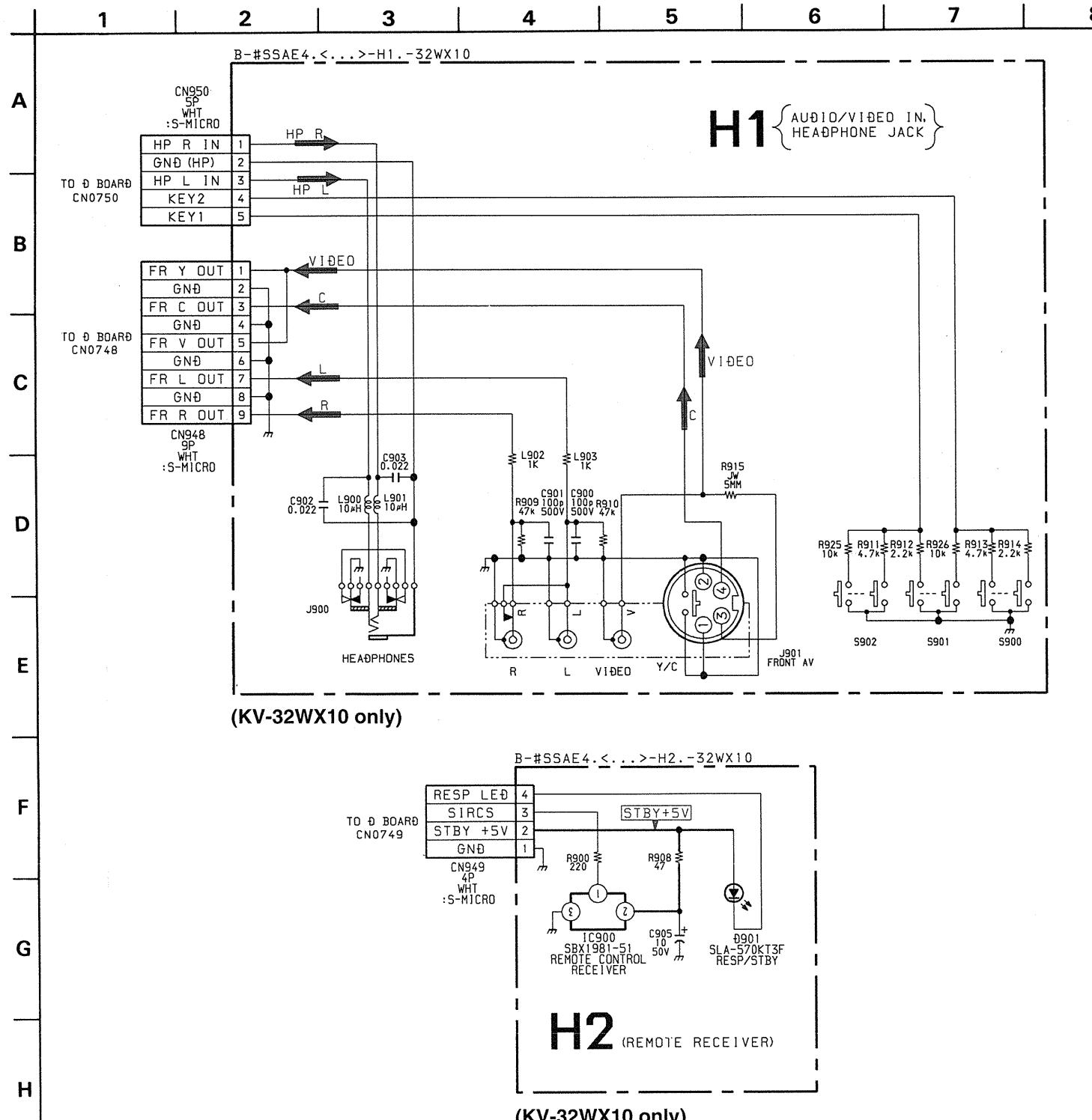
IC Voltage Table		TRANSISTOR VOLTAGE TABLE			
Ref No	Voltage (V)	B Base	C Collector	E Emitter	
Q411	0.1	4.8	4.8		
Q412	0.1	4.8	4.8		
Q415	1.8	0.1	-		
Q416	0.1	5.6	-		
Q1801	0.1	-	0.9		
Q1802	4.0	0.1	0.1		
Q1804	0.3	4.8	0.1		
Q1805	2.5	1.3	0.7		
Q1807	2.5	1.3	0.7		
Q1808	0.1	4.7	0.1		
Q1809	0.1	0.1	0.1		
Q1810	0.1	4.8	-		
Q1812	0.5	10.5	-		
Q1813	0.1	3.7	0.1		

C ARD A GE T A B LE	B BOARD T R A N S I S T O L T A B L E
IC Voltage Table	Transistor Voltage Table

Pin No	Voltage (V)	Ref No	B Base	C Collector	E Emitter
3-4	2.4	Q411	0.1	4.8	4.8
6-7	0.7	Q412	0.1	4.8	4.8
9	4.6	Q415	1.8	0.1	-
11-13	4.7	Q416	0.1	5.6	-
14	0.3	Q1801	0.1	-	0.9
16	5.0	Q1802	4.0	0.1	0.1
3-4	2.4	Q1804	0.3	4.8	0.1
6-7	0.7	Q1805	2.5	1.3	0.7
9	4.6	Q1807	2.5	1.3	0.7
11-13	4.7	Q1808	0.1	4.7	0.1
14	0.3	Q1809	0.1	0.1	0.1
16	5.0	Q1810	0.1	4.8	-
1	5.0	Q1812	0.5	10.5	-
2	2.3	Q1813	0.1	3.7	0.1
3-4	2.5				
6-7	0.8				
9-11	3.0				
12	4.5				
13	3.0				
14	0.4				
15	0.2				
16	5.2				
2	2.5				
4-5	2.3				
12	2.0				
14	2.0				
15	2.6				
16	8.0				
2	2.9				
4-5	2.6				
12	2.3				
14	2.1				
15	2.8				
16	8.0				

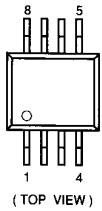


IC Voltage Table		
Ref No	Pin No	Voltage (V)
IC402	2-4	5.0
	5	7.8
	6-7	4.0
	8	3.7
	10-12	5.0
	14	0.7
	16	4.7
	17	5.1
	18	1.8
	19	7.5
	20	2.5
	21	3.3
	22	2.8
	23	3.3
	24	2.9
	25	3.3
	27	4.0
	28	3.8
IC405	5	3.2
	9	3.2
	13-14	3.2
IC406	16	4.8

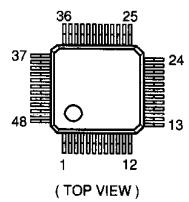


5-4. SEMICONDUCTORS

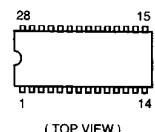
BA7046F
BA7046F-T1
MB3793-42PNF
MB3793-42PNF-ER



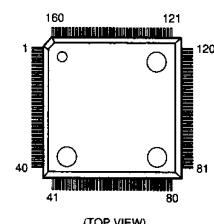
CXA1855Q-T6



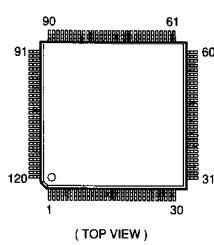
CXD2053S
TDA4780/V3



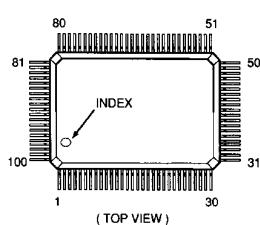
CXD8624Q



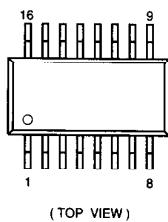
CXD8625Q



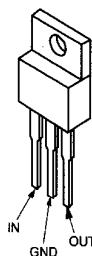
CXD8626Q



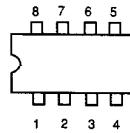
HEF4053BT
MC74F157ADR2
74HCT4046AD/S470



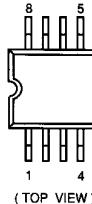
LM2940CT-9.0
LM2940T-8.0
LM2940T-9.0
L4941BV
TEA7605



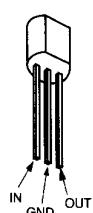
LM393P
M5216P
ST24C16FB6
TDA2822M
UPC393C



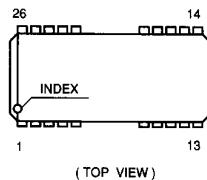
LM393PS



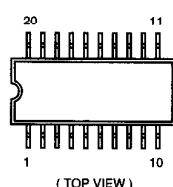
LM78L05ACZ
LM78L12ACZ
L78L05ACZ-AP
L78L12ACZ-AP



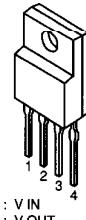
MB814400C-70PJN-ER



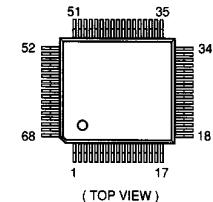
MC74F240DWR2



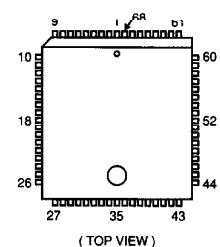
PQ05RF21



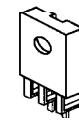
P83C654EBA/560
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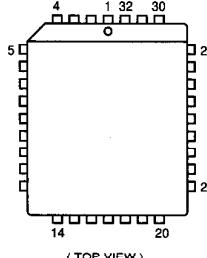
MSP3400C-PS-C6-T-ND
MSP3410B-PS-F7-T-ND
SDA30C164-2-GEG
SDA5275



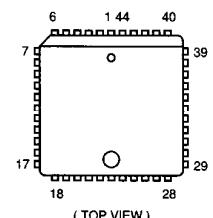
SBX1981-51



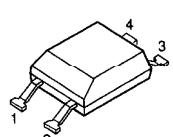
M27C4001-15C1-AE401



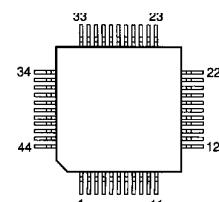
SAA4952WP/V1



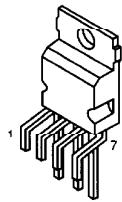
PC123F2
PC123FY2



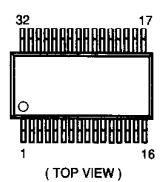
SDA9361



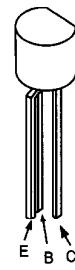
STV9379



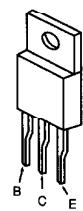
TDA8755T-T



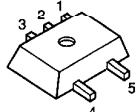
**BF199
BF199-AMMO**



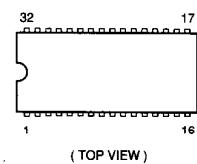
2SA1837



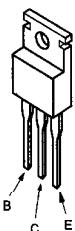
**TC4S66F
TC4S66F-TE85L**



**TDA9143/N2
TDA9144/N2
TDA9170T**



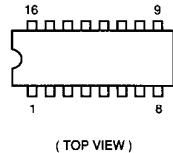
IRF620



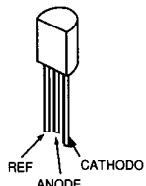
**2SC2500-B
2SC2551-O
2SC2551O-TPE2**



TDA4665T-T



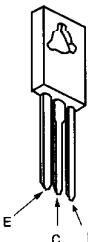
**TL431CLP
TL431CLP-Z20
TL431CPS-T1
TL431CZ**



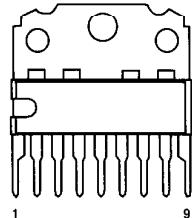
**DTA144EK
DTA144EK-T146
DTC114EK
DTC114EKA-T146
DTC123EK
DTC123EK-T146
DTA144EKA-T146**

**DTC144EK
DTC144EK-T146
DTC144EKA-T146
2SA1037K-T-146-R
2SA1162-G
2SC2412K-QR
2SC2412K-T-146-R**

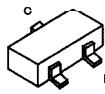
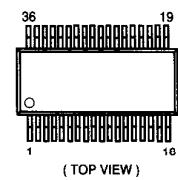
**2SC2688-LK
2SC3840K**



**TDA6111Q
TDA6111Q/N4**

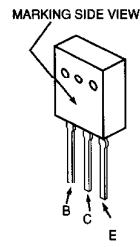


**TMS4C2972-26DTR
TMS4C2972-28DTR**

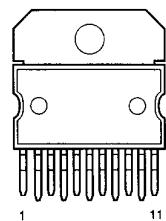


**DTA144ESA
DTA144ESA-TP
DTC114ESA-TP
DTC144ESA-TP
2SA933AS-RT
2SA933S-RT
2SC1740S-RT
2SC2785-HFE
2SA1175-HFE**

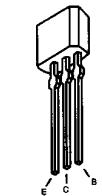
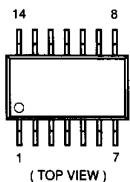
2SC3997CA



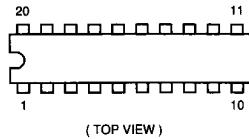
TDA7265



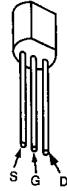
74LVC08D



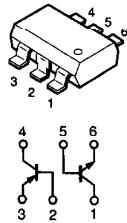
TDA7309



**BC546B
BC556B**



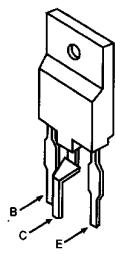
IMZ1A-T109



2SC4793



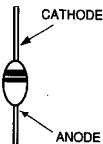
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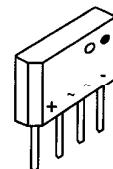
D1NL20-TR
EGP20G
EL1Z
GP08D
GP08DPKG23
MTZJ-T-77-9.1
MTZJ-T-77-9.1A
R2K-V1

RGP02-20EG23
RGP02-20EL-6394
RGP10GPKG23
RGP15GPKG23
S2LA20F
1SS133T-77
1SS83
1SS83TD

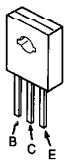
ERC38-06



S1VB20-S
S1VB40



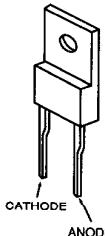
2SD2396H



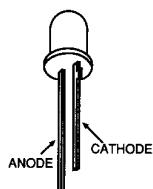
D10SC4M



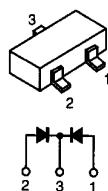
ERD08M-15



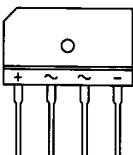
SLA-570KT3F



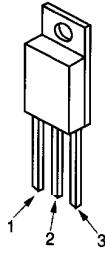
DAN202K
DAN202K-T-146



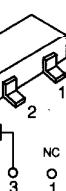
D4SB60L
D4SB60L-F
RBA-402L



ESAC39M-06CF38
ESAD39M-06C

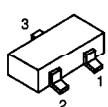


MA3030-H(TX)
MA3033-L
MA3033L-TX



MA3056M-TX
MA3062M-TX
RD5.6M-B2

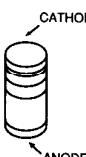
DAP202K
DAP202K-T-146



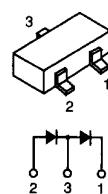
ERA38-06
ERA38-06TP1
MTZJ-T-77-13B
MTZJ-T-77-15B
MTZJ-T-77-2.2A
MTZJ-T-77-33C
MTZJ-T-77-39C
MTZJ-T-77-5.6B
MTZJ-T-77-8.2B
MTZJ-T-77-9.1B

MTZJ-13B
MTZJ-33C
MTZJ-39C
RD15ES-B2
RD5.6ESB2
RD8.2ESB2
RD9.1ESB2
1SS119-25
1SS119-25TD

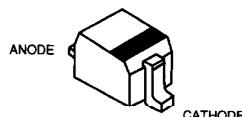
MA3051L-TX



DA204K
DA204K-T-146

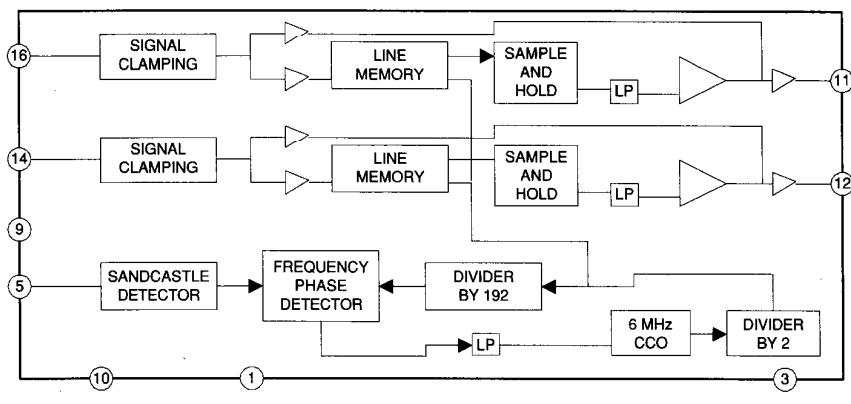


RD12SB2
UDZ-TE-17-12B

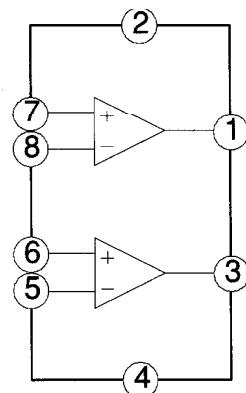


5-5. IC BLOCK DIAGRAMS

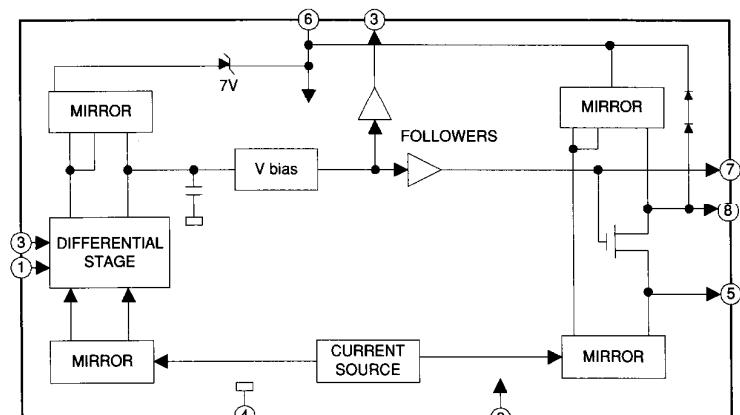
A BOARD IC303 TDA4665T-T



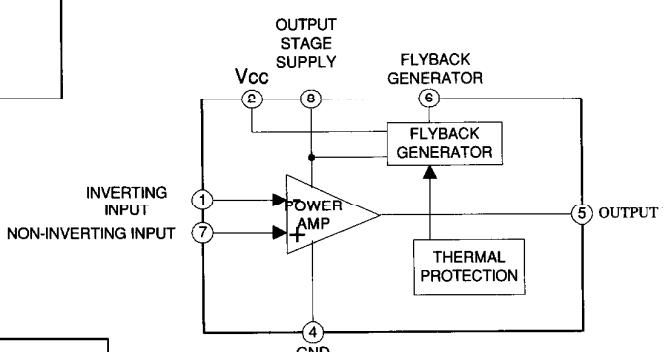
D BOARD IC261 TDA2822M



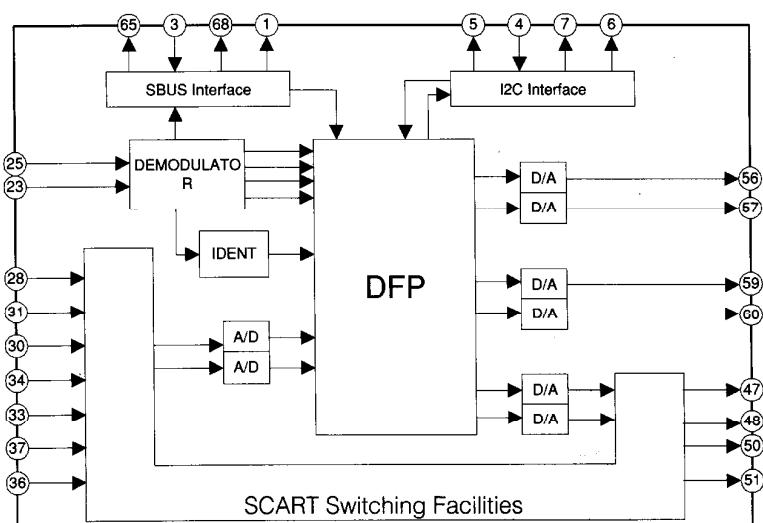
C BOARD IC703,704,705 TDA6111Q/N4



D BOARD IC802 STV9379



A BOARD IC201 MSP3410/MSP3400



SECTION 6

EXPLODED VIEWS

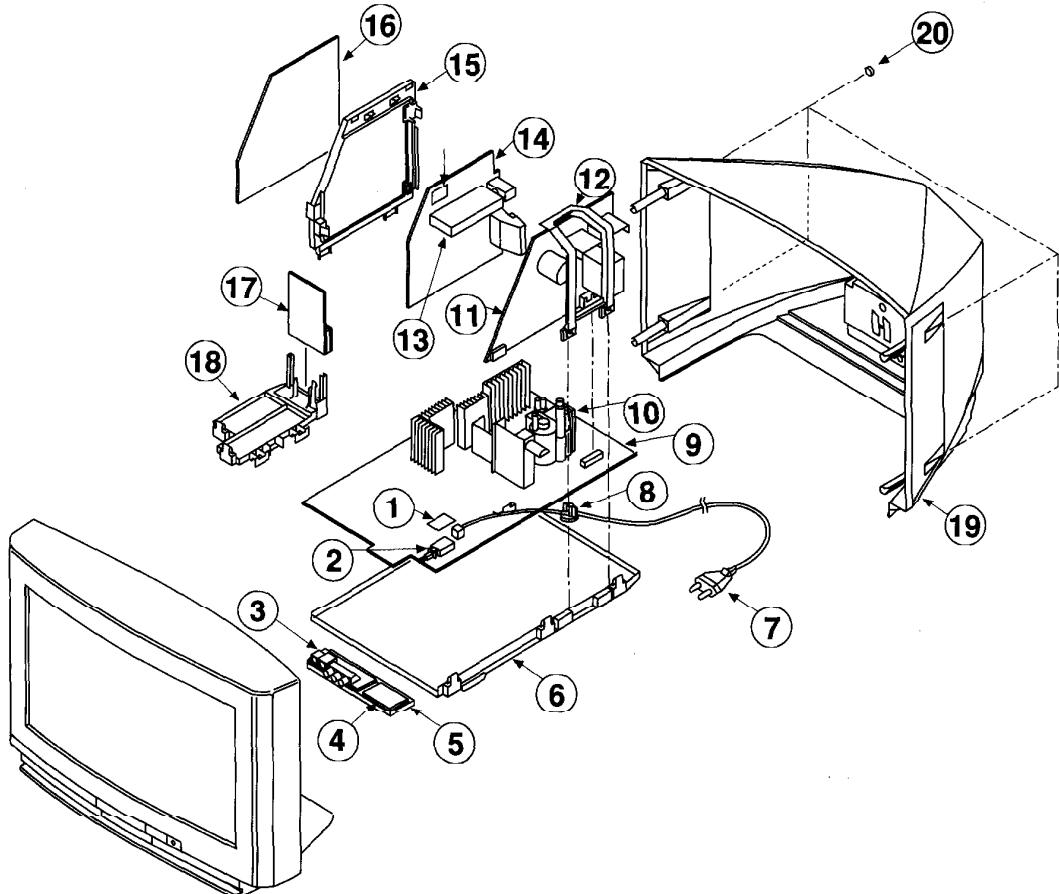
NOTE :

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remarks column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and marked **A** are critical for safety.
Replace only with the part number specified.

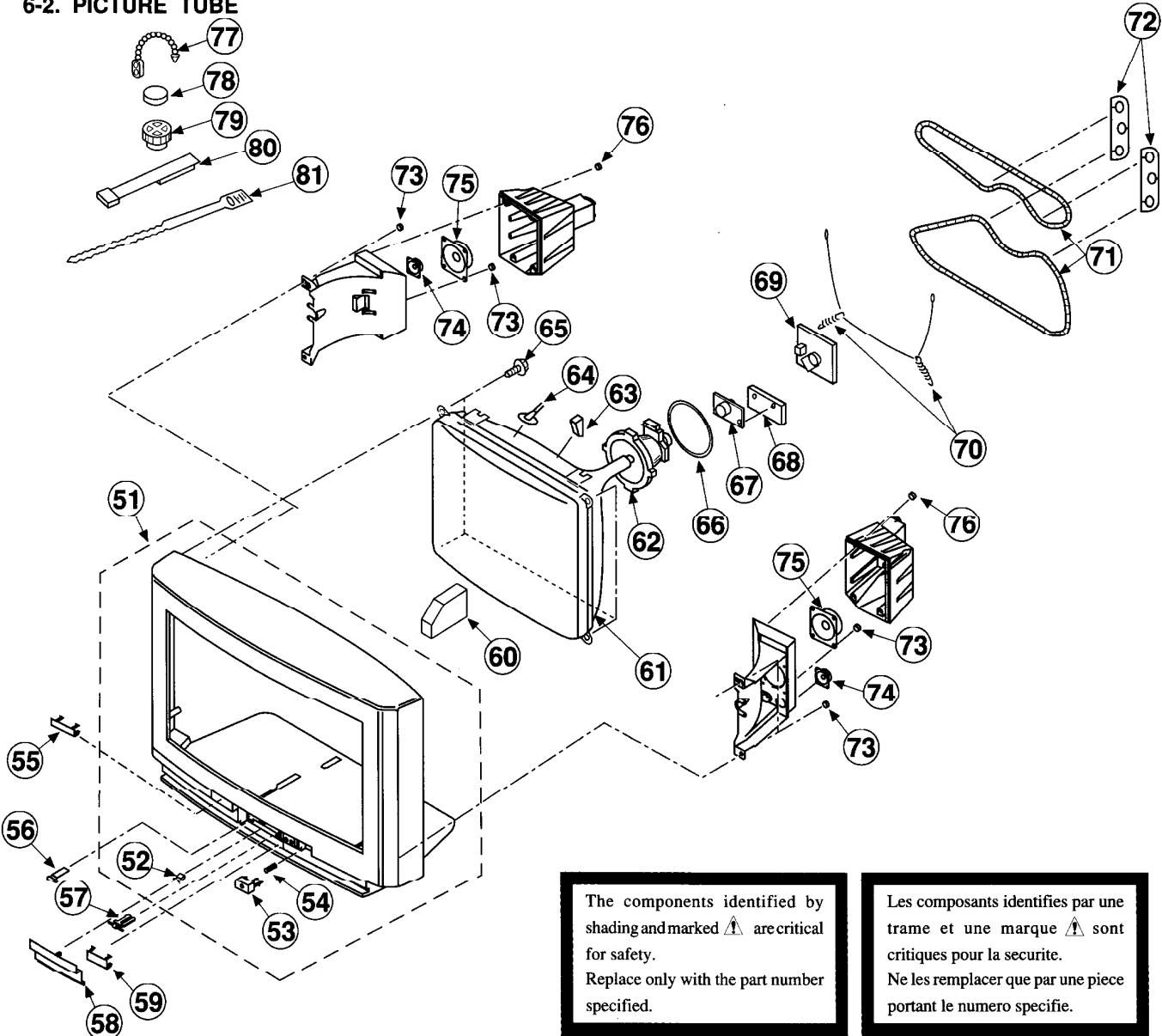
Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

6-1. CHASSIS



REF NO	PART NO	DESCRIPTION	REMARK	REF NO	PART NO	DESCRIPTION	REMARK
1	4-386-611-01	COVER SWITCH	(KV-32WX10B/32WX10D)	12	*4-203-613-01	SUPPORTER, G	
3	*A-1646-122-A	H1 BOARD, COMPLETE	(KV-32WX10B/32WX10D)	13	1-693-338-11	TUNER/VIF (AEP) (KV-28WX10D/32WX10D)	
4	*A-1646-123-A	H2 BOARD, COMPLETE	(KV-32WX10B/32WX10D)	14	1-693-340-11	TUNER/VIF (FR) (KV-28WX10B/28WX10B)	
5	*4-203-627-01	BRACKET, H	(KV-32WX10B/32WX10D)	15	*A-1632-567-A	A BOARD, COMPLETE (KV-28WX10B)	
6	*4-203-457-01	BRACKET, MAIN	(KV-32WX10B/32WX10D)	16	*A-1632-581-A	A BOARD, COMPLETE (KV-32WX10B)	
				17	*A-1632-569-A	A BOARD, COMPLETE (KV-28WX10D)	
				18	*A-1632-584-A	A BOARD, COMPLETE (KV-32WX10D)	
8	*4-202-531-01	AC CORD LOCK (SC)		19	*4-203-612-01	BRACKET, A-B	
9	*A-1640-244-A	D BOARD, COMPLETE	(KV-28WX10B/28WX10D)	20	*A-1620-091-A	B BOARD, COMPLETE (KV-28WX10B/28WX10D)	
	*A-1640-245-A	D BOARD, COMPLETE	(KV-32WX10B/32WX10D)		*A-1620-092-A	B BOARD, COMPLETE (KV-32WX10B/32WX10D)	
11	*A-1636-026-A	G BOARD, COMPLETE	(KV-28WX10B/28WX10D)		*A-1651-084-A	J1 BOARD, COMPLETE (KV-28WX10B/28WX10D)	
	*A-1636-027-A	G BOARD, COMPLETE	(KV-32WX10B/32WX10D)		*A-1651-086-A	J1 BOARD, COMPLETE (KV-32WX10B/32WX10D)	
				18	*4-203-537-01	BRACKET, J-K-T	
				19	4-203-503-01	COVER, REAR (KV-28WX10B/28WX10D)	
				20	4-203-630-01	COVER, REAR (KV-32WX10B/32WX10D)	
					4-302-404-03	SCREW (WASHER HEAD), (+P 4X16)	

6-2. PICTURE TUBE



REF NO	PART NO	DESCRIPTION	REMARK	REF NO	PART NO	DESCRIPTION	REMARK
51	X-4200-269-2	BEZNET ASSY(KV-28WX10B/28WX10D)52-54		65	4-203-216-01	PT-SCREW	
	X-4200-291-1	BEZNET ASSY(KV-32WX10B/32WX10D)52-54		66	1-452-724-22	COIL, NA ROTATION (RT-165)	
52	4-047-464-01	CATCHER PUSH		67	8-453-011-11	NECK ASSY PICTURE TUBE (NA299-M)	
				68	*A-1644-075-A	VM BOARD, COMPLETE(KV-28WX10B/28WX10D)	
					*A-1644-076-A	VM BOARD, COMPLETE(KV-32WX10B/32WX10D)	
54	4-202-964-01	SPRING		69	*A-1638-092-A	C BOARD, COMPLETE(KV-28WX10B/28WX10D)	
55	4-034-272-01	PLATE, CORRECTION, TLV			*A-1638-096-A	C BOARD, COMPLETE(KV-32WX10B/32WX10D)	
56	4-045-250-01	DAMPER		70	4-369-318-31	SPRING, TENSION(KV-28WX10B/28WX10D)	
57	4-202-555-01	SHAFT, DOOR			4-369-318-51	SPRING, TENSION(KV-32WX10B/32WX10D)	
58	4-203-506-11	DOOR, CONTROL					
59	4-203-505-01	WINDOW ORNAMENTAL					
60	*4-203-098-01	SUPPORTER, CRT					
63	3-704-495-01	SPACER, DV		72	4-045-294-01	HOLDER, DGC (29" / 32")	
				73	4-039-356-01	SCREW(3X12), (+) BV TAPPING	
				74	1-505-484-11	SPEAKER (2.6CM)	
				75	1-505-485-11	SPEAKER (8CM)	
				76	4-039-358-01	SCREW(4X16), (+) BV TAPPING	
				77	4-308-870-00	CLIP, LEAD WIRE	
				78	1-452-032-00	MAGNET, DISK; 10MM Ø	
				79	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM Ø	
				80	X-4387-214-1	PERMALLOY ASSY, CORRECTION	
				81	3-701-007-00	BAND, BINDING	